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Natural Calamities Of Jammu and Kashmir

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PREFACE

Natural calamities exercise an indelible mark on the socio-economic life of the people. The study of these calamities and their effect is not merely of academic interest but of an immense practical value to ensure legitimate well-being to the public at large.

The study of these calamities may prove helpful even to the administrators in preventing and fighting such catastrophes later.

The present study covers a period from the emergence of the Jammu and Kashmir State in 1846 A.D. to the coronation of Maharaja Hari Singh in 1925. Opening with an account of the physical features and natural resources, the work examines the causes, extent of damages, and the manifold effects of the major natural calamities experienced by this state and the reactions and policies of the government and other human agencies.

Collection of material for the period from 1846 to 1885 was extremely difficult. Not many official records were maintained for the years before 1877 A.D. Even after that date the records up to 1885 were available in a highly fragmented and unsystematic manner. However, the documentation of material since 1885 has been done in a fairly satisfactory manner. Secondly, the total absence of local newspapers in the state before 1924 has been a serious obstacle for obtaining information for this period. It was only in 1924 that the first local newspaper made its appearance in the state. Therefore, for the collection of information and data for this period the alternative sources were the newpapers published in the neighbouring

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states. Lastly, the non-availability of literary work in any form reflecting the weal and woe of the people of this state has further added to difficulties. Even the official records of the State Government after 1925 are closed to scrutiny. Otherwise this would have been up-to-date.

This work is mainly based on contemporary sources, which include published and unpublished records of the Jammu and Kashmir state and of the Government of India, available at the State Archives, Jammu and at the National Archives of India at Delhi, respectively. Besides, manuscripts, news papers (of other States), journals, Annual Reports of various departments of the State Government, Assessment Reports of various districts and tehsils, and other printed works, both primary and secondary, have been consulted.

Some important issues were discussed with officials of the departments concerned. The statistical data displayed at intervals in this book are mainly drawn from the census reports of the Government of India and from the Annual Reports of the various departments of the State Government.

In the first place, I am highly indebted to Dr. A.C. Bose, Prof. and Head of the Department of History, University of Jammu, Jammu for guiding me throughout the period of my research.

My thanks are also due to the staff of the State Archives Repositories, Jammu and Srinagar, Research Library Srinagar, Fire Brigade Office, Srinagar, Ranbir Library, Jammu, M.A.M. College Library, Jammu, Central Library, Jammu University, Geology Deptt., University of Jammu, and of the National Archives of India, without whose help and cooperation it would never have been possible to complete this work. I owe my sincere thanks to the staff of P.G. Deptt. of History, University of Jammu, and to many of my friends in many other departments and institutions, for their valuable suggestions.

2.8.1976 Jarnail Singh Dev

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ABBREVIATIONS

1. A.R.	Annual Administration Report of Jammu and Kashmir State (General)
2. A.R.P.W.D.	Annual Report of the Public Works Department of Jammu and Kashmir State
3. Assess. Report	Assessment Report of the Specified Tehsil or Circle
4. Census	Census of India—Kashmir Part I
5. Census II	Census of India—Kashmir Part II
6. Deptt.	Department
7. Extl.	External
8. Fgn.	Foreign
9. Front.	Frontier
10. Genl.	General
11. Govt.	Government
12. G.O.I.	Government of India records available in the National Archives, New Delhi.
13. Hand Book	A Handbook of Jammu and Kashmir State, 1924.
14. I.G.I.	Imperial Gazetteer of India (Year as mentioned).
15. Intl.	Internal
16. JK	The Jammu and Kashmir Government records available in the State Repositories of Jammu and Srinagar.
17. J&K	Jammu and Kashmir State
18. Memo.	Memorandum
19. Msc.	Manuscript

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20. Pol.	Political
21. Sect.	Secret
22. Secy.	Secrecy
23. S.M.M.P.	Statement of the Moral and Material progress of India
24. Supdt.	Superintendent
25. T.R.	Trade Report

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CHAPTER I

PHYSICAL FEATURES

I

The State of Jammu and Kashmir as a distinct unit appeared on the map in the wake of the Treaty of Amritsar, signed on the 16 March, 1846 between Maharaja Gulab Singh, the purchaser on one side and the British Indian Government on the other.

Location

It is a land locked state lying between 32°17′ and 36°58′ North Latitude and 73°26′ and 80°30′ East Longitude.[1] Internally, the total length of the state from east to west is 250 miles and breadth from north to south 275 miles.[2] It is bounded on the north by the Chinese and Russian Turkistan, on the east by Tibet, Punjab on the south and north-west Frontier Province of India on the west respectively. Three Empires, namely Russia, China and Afghanistan come close to the boundaries of India in this state.

Area

The total area of the state, according to the Administrative Report of 1911-12 is 84,432 sq. miles.[3] It is the biggest of all the Indian States in terms of area.

The Frontier Districts of Ladakh and Gilgit comprise high and dry mountain ranges and cover nearly three-fourth of the total area of the state. The Provinces of Jammu and Kashmir

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comprise an area of 12,165 and 8,533 sq. miles respectively. The Pir Panjal mountain and its adjacent hills cover a large area of these divisions. On the whole, the country is essentially mountainous.[4] The total cultivable area in the State (excluding the Frontier Ilaqas) amount to 3616 sq. miles or 5.18 per cent of the total area.[5]

Physical Divisions

As far as physical divisions are concerned, the State of Jammu and Kashmir is like three-storeyed house. First unit consists of the outer hills. This region is of diverse and complex physiography and lies to the north of the Punjab. The second comprises the region of middle mountains. There are deep-cut ravines with precipitous defiles all along this middle Himalayan region. The third comprises the great Himalayas and the Karakorams. The ranges in this region are between 17,000 ft. and 22,000 ft. in height.[6]

As far as physiography is concerned, the State can be split into four natural divisions:[3]

1. *Semi-Mountainous region:* This area is situated between the Punjab and the State's mountainous territory. Besides, three great rivers, the Ravi, the Jhelum, and the Chenab, the two large streams Ujh and Tawi, water this tract. The mean height of this area is 1,000 ft. and the hills of this region rise to a height of about 4,000 ft. The approximate total area of this division is 3,609 sq. miles.[8] Its northern parts consist mainly of foothills known as Kandi Illaqa (arid tract). The chief towns located in this region are Jammu, Kathua, Jasmergarh, Akhnur and Bhimber.

2. *Mountainous Tract or the Outer Hills:* The outer hills consist of the lower hills lying roughly to the south of Pir Punjal which separates the provinces of Jammu and Kashmir. The altitude of this area varies between 2,000 and 4,000 ft. Some hills in Udhampur district rise over 15,000 ft. The Chenab and the Poonch river also waters this area. The Riasi district located in this area contains rich mineral resources. The area of this division is 9,769 sq. miles.[7] Here cultivable land is rather scarce and is scattared in patches on small plateaus. The

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territory comprising the first and the second divisions is usually called the Chenab valley.[10]

3. *The Jhelum valley:* The Kashmir valley or the happy valley is watered by the Jhelum and a number of small streams, like the Liddar, the Sindh and the Kishen Ganga. The Kashmir valley is about 84 miles in length and 20 to 25 miles in width,[12] and has an average elevation of 5,600 ft. This valley has been since long a tourists' paradise, "an emerald set in pearls"[13] as it has been poetically called. It is believed to be the largest of such high inter-mountain valleys, and has only a few passes connecting it with the outer world.

The lower and the flat areas produce rich harvest of crops and fruits, while the higher areas sustain rich forests. The area of this division is 8,539 sq. miles.

4. *Indus valley:* The Indus valley consists mainly of the early and middle reaches of the Indus. This valley is enclosed by the Karakoram mountains on the north and the central range of the Himalayas on the south. One of its peaks, K^2 (Mt. Godwin Austen) is the second highest peak in the world (28,250 ft.).

This area is further devided into two portions, Ladakh and Gilgit. Ladakh is one of the highest inhabited regions in the world. Its chief town Leh lies 11,500 ft above the sea level.[14] Gilgit is at a lower height and is very important from the defence point of view.

Administratively, this vast area of about 84,471 sq. miles was divided into two provinces., i.e. Jammu and Kashmir, while the frontier districts of Ladakh and Astora sub-division were directly under the Maharaja.

Passes

Kashmir has as many as 20 passes,[15] of which the eight discussed below are important ones:

1. *Baramulla Pass :* The Baramulla pass is the most important of all the passes. Situated about 34 miles west of Srinagar, it lies approximately on 34°13′ Latitude and 80°23′ Longitude.[16] The river Jhelum running through this pass leaves the valley for Muzaffarabad.[17] This is considered to be the best

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route from the Punjab to Kashmir[18] and remains open throughout the year.

2. *Banihal Pass:* The is the lowest pass across the Pir Panjal Range. Situated about 3,000 ft.[19] above the level of the valley, it forms the outer boundary of the valley. This pass gets ice-bound for some time in winter. But the Jawahar tunnel opened in 1959 enables even heavy traffic to pass through it all the year round. This is the most convenient route of communication with the upper Chenab valley, the Jammu region, and the eastern Punjab hill states.

3. *Gurez* : The pass connects Kashmir with Astore and Baltistan.[20]

4. *Zoji-La Pass* : Known by its Ladakhi name, Zoji La,[21] it is situated at an altitude of 11,300 ft. Vigne calls it Durus, perhaps because the river Sind here flows into Drass.[22] It connects Kashmir with Ladakh, Tibet and Turkistan[23] and it is through this pass that Kashmir maintained commercial and cultural relations with China Turkistan.

5. *Punch or Pukli pass :* It is situated between 33°4′ North Latitude and 74° 9′ East Longitude.[24]

6. *Gulmerg Pass :* This pass is, situated between 34°1′ North and 74°4′ East Longitude.[25]

7. *Pir Panjal Pass:* It is 11,400 ft. high and lies in the south-west of Kashmir.[26] This pass gives access to Rajouri and Poonch from where direct routes lead to central and western Punjab.

8. *Mir Bal Pass:* It is 11,570 ft. high and connects Kashmir with Kishtwar.[27] It remains closed during the winter months.

Lolak, Pahlgam, Koh-i-Hamon and Kuri are some other passes known to the Kashmiris. These passes connect the valley with Ladakh, Tibet, Sinkiang and other central Asian countries.

Routes

The main routes connecting the Kash mir valley with the Punjab are:-

1. *Murree Route:* It starts from Srinagar to Deval Via Baramulla covering the distance from Srinagar to Baramulla by boat and thence Deval to Rawalpindi via Murree covering the distance by cart in 11 marches.[28]

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2. *Pir Panjal Route:* This old favourite route of the Mughals is very popular with the pony drivers. The high Pir Panjal lies on this route.[29]

3. *Jhelum Valley Road:* It lies along the river Jhelum from Baramulla to Kohala. Its construction started in 1881 and the road was opened to wheeled traffic in September, 1890.[30] This road enters Srinagar city at Amirakadal. The length of the road from Srinagar to Kohala was 132 miles and from Kohala to Rawalpindi 64 miles. This was the best kept road and had few natural obstacles.

4. *Punch Route:* It led via Uri to Thana Mandi, a place 70 miles from Bhimber. The whole journey could be completed in eight marches around 9 miles a day. It was a difficult route and was used infrequently.[31]

5. *Banihal Road:* This was a direct road between Srinagar and Jammu and led to the Punjab. This road was constructed in instalments—first from Jammu to Udhampur, then upto Banihal and then upto Srinagar. Its construction was started in 1901-02[32] and was completed in May, 1922.[33] at a total cost of 4108.850 rupees. This road remains open for a longer period every year. The Banihal pass lies on this road where a tunnel was also constructed to ensure the safety of the traffic.

6. *Gilgit Road:* Earlier Gilgit was connected with Kashmir through a rough track, often rendered impassable by avalanches.[34] To facilitate trade and especially military convoys a road was constructed at a cost of Rs. 15 lakhs which was completed in 1893.[35]

Besides, there were minor roads within the state, e.g. the Srinagar-Tangmarg;[36] Avantipur-Islamabad;[37] Uri-Mari-pur[38] and anewly built Shalamar Road;[39] Jammu-Suchetgarh (18 miles), which further led to Sialkot* in the Punjab; Jammu-Katra;[40] Jammu-Akhnoor,[41] and a footpath from Ramban to Riasi.[42]

Rivers

In Kashmir, the Jhelum or Behat or Vihat, known as Vitasta[43] in Sanskrit, is the main river. A few other streams flow into it from many directions. The river Jhelum emerges

*Sialkot is in Pakistan now.

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from the mouth of a spring in 33°30′ north Latitude and 75°25′ east Longitude a little below Verinag known as Vathuvatru[44]. Two or three miles north of Islamabad, the Jhelum receives the Liddar, which rises in the snows north of the Shisha Nag. A few miles north of Bij Behara it receives the united waters of the Veshav and Rambiara rivers, both of which flow down from the Panjal mountains. Dud ganga joins this river on the left bank near the city of Srinagar.[45] Below the city of Srinagar, at the village of Shadipur, it is joined on the right bank by the Sind, which is the largest of all its tributaries in the valley.

The Dal lake, the Mansbal lake and the Wular lake are connected with this river. For about 60 miles from Islamabad to Baramulla, the river is usually navigable except in seasons of unusual[46] drought. Below Baramulla the river is not navigable till it reaches the plain. The Jhelum leaves the valley at Baramulla[47] and pursues a westerly course upto Muzaffarabad, where the Kishen Ganga, a rather big river from the snowy mountains, joins it.

In the Jammu Province, the major rivers are the Chenab and the Ravi. Besides these rivers, two big streams of Ujh and Tawi are also important. The Chenab rises in the Lahol[48] region and flows through Pangi, a Part of the Chamba territory and then enters the Jammu region negotiating three major bends, first near Kishtwar, second at Janglawar and third at Arnas.[49]

At these three bends the river receives three streams: (i) Wardwan, (ii) Khal Ne and (iii) Ans. This is very fast flowing river. The river Ravi flows by the east of Jammu, near Samba, and does not have much utility for the people of this state. The Tawi and the Ujh flow by the side of Jammu and Rajbagh (Kathua), respectively.

Lakes

In Kashmir there are three important lakes:-

1. *Dal lake:* This lake is situated to the east of Srinagar and was formed of springs and streams. The lake has some artificial floating gardens.[50] The lake was 3.87 miles in length and 2.58 miles in breadth.[51] Its water flows out only when the level of the river is low.

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2. *Manasbal Lake:* This lake is about a mile away from the right bank of the Jhelum. The lake is two to three miles long, about a mile wide and nearly 47 feet deep.[52] The lake is connected with the main river through a canal which enters it about 400 yards south of the village Sumbal.

3. *Wular Lake:* The Wular lake is the largest sweet water lake in the Indian sub-continent. The length and breadth of the lake are about 10 miles and six miles respectively.[53] It is situated to the east of Sopore and the Jhelum flows through it.

Besides these, there are some mountain lakes such as Konsar Nag, Shish Nag, Ganga Bal Nag and Sarbal Nag, etc.

In Jammu Province there are two important lakes:-

1. *Mansar Lake:* This lake is situated near Parmandal and is about 8 to 10 miles away from another lake. Mansar measures nearly three quarters of a mile in length in about half a mile in breadth. Situated about 2,000 to 2,200 ft. above the sea, it is surrounded by hills except on one side. This lake is perhaps fed by springs under the lake itself.[54]

2. *Sureinsar (Saroin Sar):* Sureinsar is another lake situated about 8 to 10 miles from Mansar. The lake is about half a mile long and quarter mile broad.[55] This lake is also fed by a spring and has a little island at the centre.

Soil

The soil of Kashmir is generally classed as clayey, loamy rich and light, peaty and low lying swamps and is of alluvial origin but quite fertile.[56] In the semi-mountainous tracts the soil is indeed coarse. The underlying rocks in this area are loose boulders. The Kandi tracts have a stoney soil and give a dry look even during the rainy season.[57] The soil of Ladakh is bare and rocky with bare gravel slopes.[58]

Climate

The climate of the state differs from region to region on account of great variations in altitude. The tropical heat of the Punjab and the arctic cold of Ladakh are the extremes, and there are

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certain places where snow makes the life stagnant for about seven months in a year.[59] In the outer hilly region of the Jammu Province, climate has three main seasons: (i) hot weather from April to June, (ii) a rainy season from July to September and (iii) cold weather from October to March.[60]

In the Kashmir Province there is not much rise in the temperature upto the end of May, but in June-July and August, the temperature can rise upto 90°F in shade.[61] After August there is a decrease in the temperature and by the end of October it becomes cold and by January cold becomes intense with the snowfall.[62] The snowy period lasts for 2½ months beginning from Magh (December-January) to middle of Chaitra[63] (March). During winter Dal Lake sometimes gets frozen, enabling people to skat[64] over it. The distinctive features of Kashmir's climate is the absence of the monsoon rain, because the monsoons cannot cross the mountains enclosing Kashmir on the south.[65]

Rainfall in the different regions of the state also varies to a great extent. The annual rainfall varies from 50 to 70 inches in the outer hills regions, from 30 to 40 inches in the Kashmir valley and is less than 10 inches in the frontier districts.[66]

II

Flora

Kashmir is richly endowed by nature as far as forests are concerned.[67] Towards the end of first quarter of this century, the area covered by the forests was about 9,668 sq. miles and could be divided into tow zones, viz., (i) Sub-Himalayan and (ii) Himalayan. The sub-Himalayan zone extended from the foothills to 5,000 ft. above the sea, a nd the Himalayan zone extended upto 11,000 ft.[68]

The sub-Himalayan forests consisted of bamboos, pines and the Himalayan ones had deodar and pine, the fir and spruce and sub-alpine.[69]

Deodar

The most valuable timber is that of Deodar. These grow

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mostly in the northwest corner of Kashmir and is in great demand for houses, boats and bridges. Deodar's timber is exported to the Punjab also. Deodar is known for its durability, strength and resistance to pests. According to the Jammu and Kashmir State Handbook of 1924, it was estimated that the area actually stocked with Deodar amounted to over 4,00,000 acres.[69] From the roots of Deodar, a form of resin is distilled, which is used by herdsmen as an ointment for buffaloes.

Bluepine (Yar or Kairu)

Blue pine (Kairu or Yar) is highly valued and is next only to Deodar for housebuilding because of its strength and durability.[70] This tree is found on a slightly higher elevation than the Deodar. The white resin of the pine (Kanglan) is used by the Kashmiris as a medicine to heal their wounds. According to the Handbook of 1924, the Kairu forests covered an area of 1,50,000 acres.

Himalayan Spruce

The timber of spruce is widely used for house-building, It is not durable when exposed to wet. Formerly, young cones of the spruce were used in the manufacture of a drug known as Gaz pipal.

Silver Fir

It is preferred to Spruce by the Kashmiris because of its greater durability. Being free from knots, it is easy to work on. It is used particularly for doors and window frames, ceiling, crates and boxes. These trees us ually measure 110 ft. in height and 16 ft. in girth.

Chir Pine

Chir, the tree of lower altitude, is not found in the valley of Kashmir. The Bhimber District of Jammu Province has a very rich growth of Chir. The tree is much valued for its resin and serves as timber to the poor.[71]

Walnut

Walnut timber is in great demand for furniture, gun stocks, ploughs and spinning wheels. The tree is found at an elevation

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of 5,500 to 7,500 ft.[72] The fruit is extremely tasty. Its oil is extensively used for many culinary purposes and its bark for cleaning the teeth.

Chinar

Chinar, a king among trees, is found everywhere in the Kashmir valley. Its chief characteristic is the massiveness of its foliage. The numerous medullary rays render it very suitable for the decorative furniture.

Poplar

Poplar grows at all elevations from 5,000 ft. to 7,500 ft. It yields poor timber and poor people use it for house-building. The wood of Poplar is soft, white and suitable for carving.

Willow

Willow grows along the river banks and swampy grounds of Kashmir valley. Its wood is essential for making sports goods. Its twigs are used for basket making. Its leaves serve as fodder. Block wood is exported to India for the manufacture of cricket bats.[74]

Mulberry

Besides giving fruits, the mulberry trees supply wood, which is chiefly used for the doors of shrines, ploughs and for boat-making. Its pliability makes it suitable for bent wood furniture. This tree is of great value in sericulture[75] for rearing silkworms.

Acacia

Forests of these trees, 20 and 30 feet in height, are seen in the outermost range of hills. Its wood is used for agricultural implements, tent-pegs, cog-wheels, teeth of machinery and block-ing tackle. It produces a useful gum and its pads are a favourite food for sheep and goats. The bark is used for tanning and gives a reddish tinge to the leather.

Bamboo

These trees are found on the lower hills and are used for preparing implements for weaving, stakes for nets in rivers, fences, levels for raising water for irrigation, and for flag poles.

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Several agricultural implements such as carts, deslies or litters, are also made out of it. Its fibre is used for rope and for paper making.

III

Agriculture and Cultivation

The economy of this state is based mainly on agriculture. Its cultivable area is very small, 5.18 per cent in 1911 and 6.8 per cent in 1921.[76] The chief crops grown are rice, wheat, maize, barley, pulses and rape, etc.

Rice

Being the staple food of Kashmiris, it is grown through the length of the valley wherever sufficient water for irrigation is available. Rice is grown in Jammu Province also, especially in the plains. Many varieties of rice are grown in the state, but the two chief varieties are the red and white. The red variety grows at high altitudes[77] (upto 18,000 ft.). The white rice is supposed to be better. The average yield of this variety of paddy in Kashmir was 15 to 17 maunds per acre.[78] The average yield of all the varieties has tremendously increased since the fertilizers are being used.

Wheat

It is cultivated throughout the Jammu Province, at some flat portions in Ladakh and at some unirrigated elevations in Kashmir. Kashmiris do not like it. For the Jammu people, it is staple diet. The average yield of wheat till recently was about 7 mounds per acre.[79]

Maize

Three varieties of teh maize, red, white and yellow are grown. The red is liked by the Kashmiris, yellow by the people of plains and white is the liking of the people inhabiting higher parts. All the three varieties yield about 11 maunds per acre in irrigated lands and about 8 maunds per acre in dry lands.[80]

Barley

Barley is not an important crop, though it is grown in many

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parts of the state. Usually it is mixed with wheat and then taken. Giram, a peculiar type of barley, is the staple food of the Ladakhis[81] and is grown even at a height of 14,500 ft.[82] in Ladakh. The average yield of barley is about 8½ maunds per acre and that of Giram about 4 maunds per acre.[83]

Pulses

Mung is the best of the pulses grown in Kashmir. Till recently, gram was unknown to the Kashmiris. The other varieties of pulses are 'Maha' and 'Mothi'. Maha has an average yield of 4 maunds per acre.[84] Mothi is a popular food and in winter it is often used as fodder for sheep. The average yield of Mung and Mothis normally 2½ to 3 maunds per acre.[85] Peas and white beans are occasionally cultivated. On the whole, the pulses do not constitute an important item in a Kashmiri menu.

Oil Seeds

The principal oil seeds grown in Kashmir are rape, linseed and til. The oils obtained from these seeds are used for cooking purposes. The average yield of rape is 3 maunds, of linseeds 1½ to 2 maunds, and of til 1½ maunds.[86]

Saffron

The saffron of Kashmir is very famous for its bouquet, condiment and pigment. It is cultivated in Kishtwar and in the neighbourhood of Pampur, near Srinagar.

The state government's efforts to extend its cultivation resulted in nothing. Three varieties of saffron, in order of quality, are shahi, Mogra and Lachha.[87]

Buck Wheat

It can be grown in almost every type of soil, and its average yield is about four and a half maunds per acre.[88]

Sugar Cane

It is grown in the plains of the Jammu Province. Once grown, it gives three to four annual harvests. Two main varieties ('Ponda' and 'Katha') are well known.

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Amaranth

The most beautiful of all the crops in Kashmir is Ganhar (Amaranthor, Amaranthus) with its multicoloured stalks and flowers. It is frequently grown in rows in cotton fields or on the borders of maize plots. The grain is first parched, then grounded, and taken with milk or water.[89]

Kangni or Shol

It is grown in large areas of Kashmir whenever the scarcity of water for rice cultivation is feared. Its grain is husked like rice and served as a cheap food stuff. An average crop gives about three maunds per acre.[90] Besides the above-mentioned crops, potatoes, water chestnut or "Singhara" and the sacred lotus also deserve our attention. Water chestnut is an important product of the Wular lake and forms a major item of food for many villagers. The seeds of lotus are also eaten and its leaf stems serve as a vegetable.[91] The cultivation of potatoes spread in course of the 19th century.[92]

Fruits

Kashmir is known to the outer world for its fruits. The chief fruits are apple, pear, plumb, peach, cherry, mulberry, respberry, rosberry, gooseberry, strawberry, current, almond, apricot, quinees, vine and walnut. The apples of Kashmir are famous all over India. There are many varieties,[93] the best known being the 'Amari'.

Pears are of secondary importance and never form a major item of export. The quinees are grown for their seed for which these are exported to the Punjab. Walnut trees are indigenous to the country and grown all over the valley. They are found at an elevation of about 5,500 ft. to 7,500 ft.[94] The main purpose of growing walnuts is to have its oil for export.[95] Almonds are of two types—sweet and bitter.

In the Jammu Province, the main fruits are mango, mulberry, Jaman, ber and banana,[96] etc. In some parts of the Kathua Tehsil, mango forms a part of food for the poor people for about two months.

The chief fruits grown in the Frontier Districts are vines, peaches, apricots and mulberries.[97]

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Vegetables

In Kashmir a number of vegetables are grown though much attention is not paid to them. The most popular vegetable is "Knol-Khol", a hardy plant yielding much in years of favourable rains. Next important vegetable is turnip. The other vegetables grown are, chillies, egg-plants, tomatoes, white beans, carrots, onions and cucumbers,[98] cabbage, cauliflower, beetroot, radish and lady's finger are also known to Kashmiries.[99] The cucumbers are grown in abundance on the Dal Lake also.

Live-stock

The live-stock of all kinds enumerated during the Census of 1921 showed an average of 136 animals for every 100 persons, against 65 in rest of India. The live-stock of the farmers consisted of cows, buffaloes, sheep, goats, etc.

The cattle of Kashmir are small and hardy. Sheep and goats are there in large numbers, particularly in the Kashmir valley. Buffaloes and cows are rather common in the districts of Kathua, Jammu, Udhampur and Rajouri. Most of the cows are not good milch[100] animals. The bullocks of the plains are better than those of hilly areas.

Poultry birds are abundant in Kashmir and excellent fowls are found in almost every village. Ducks are kept wherever there is water and in the neighbourhood of Wular Lake geese were plentiful. Poultry and eggs form a considerable source of income.[101] Some people in the villages of Kashmir keep beehives for honey.[102]

The advantage derived by the state farmers in the shape of wool, food, manure, etc. from their live-stock was, however, not much. Their cattle on the whole were under-sized. In later years the state government made certain efforts to induce the owners to improve the breed of their animals. Bulls were imported from other parts of India and employed by the State Veternary Department for better breeding. Cross breeding was also popularised.

Mineral Products

The mineral wealth of the state remained unexploited till the current century. It was only in 1971 that the state government

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thought of establishing a department to undertake the task of exploiting these mineral resources. This department took nearly a decade to submit about seventy reports on the subject. A brief description of the minerals discovered by the department is as follows:-

Jammu Province: Jammu Province, particularly the Riasi Tehsil, is rich in mineral wealth. Iron is found in the neighbourhood of Chakar, Pouni and Riasi. Coal is found about 30 to 40 miles east and west of Riasi. An ore yielding 5% of copper was also discovered from the Radnala below Doga in Riasi Tehsil. Zinc was discovered near Darabi and nickel ores were found at Ramban, Bunias and Khaleni and in the copper bearing horizon of the Riasi Tehsil.

Besides the above, the existence of petroleum was suspected in the geological structures of the Nar Budha and Ramnagar in the Jammu Province.[103]

Kashmir Province: In the Kashmir Province thick beds of lignite were discovered in the valley. The lead deposits containing 5% of silver, graphite and gypsum were found in the Uri Tehsil. Marble of good quality was found at several places in Kashmir and serpentine was found in Skardu and Shigar, where it was cut into variously shaped cups.[104]

Besides, some precious stones were discovered in and around Padar. Aquamarine was first discovered in 1912 at Daso[105] on the Braldu river in Baltistan. The area was closely surveyed by the mineral surveying department. Other semi-precious stones were also discovered.

Frontier Districts: Borax and sulphur were obtained from the Puga valley in Ladakh. There it was collected in an impure state on the borders of certain lakes, as they dry up depositing the salt. Extensive deposits of the finest clays of all colours were found throughout Ladakh. They all are lacustrine formations. Limestone too is very common in Ladakh.

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CHAPTER II

FLOODS

Floods take place quite frequently in Kashmir. An enormous amount of water flows into the valley and the only outlet for the water from the valley is the narrow gorge at Baramulla.[1] Floods generally occur in the summer when heavy rain is followed by a bright sun, which melts the snows. If an embankment is breached or topped, a district which is dry a few hours back becomes a lake after a few hours.[2] One fairly acquainted with the country and its topography and climate shudders at the thought of the havoc the snow causes to the country after heavy rainfall in summer.

The Jhelum is mainly responsible for floods in Kashmir valley. In ordinary times, it flows gently between its high banks, but in times of flood, it overflows its natural banks.

Causes

The floods occur very rarely in the Jammu Province and as and when they take place, they are caused by heavy and continuous rains. But the floods in Kashmir are attributable to several causes.

The first cause is the geological position of Kashmir. The valley abounds in springs and other water resources which usually keep it wet. So whenever there is heavy rain, very little water is absorbed in the soil and the area soon becomes water-logged. Besides, in the Gilgit region, landslides are fairly

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common which obstruct the normal course of streams.[3] When the obstructions give way under pressure, the stored water sweeps away everything before it.

Geographically, the contour of the land makes the valley cup-shaped and liable to floods.[4] The surrounding mountains check the water flow from the valley and as a result, the flood occurs- Moreover, the Srinagar town has been unwisely located.

Other causes are as under:-

(i) Silt that comes down with rivers gets deposited and raise the river bed, thereby obstructing the flow of water.

(ii) The Jhelum is virtually the main drain for the city of Srinagar and there is no arrangement for dredging.

(iii) Till the close of 19th century, the State Government had practically neglected the maintenance of embankments and bunds.

(iv) Lastly, the construction of the bridges was such that they obstructed the flow of water whenever it rose high.

The Floods of 1858

A devastating flood occurred in 1858.[5] Available accounts reveal that on 10th August, 1858, at about 5.a.m., the Indus at Attak was very low. At 7.a.m. it had risen to a height of 10 ft. above the normal level and continued to rise until it stood quite high.[6] Capt. Henderson, an eye-witness, who crossed the river in a boat four hours after the rise began and three and a half hours before the maximum, speaks of water as "welling up quietly but very rapidly".[7]

As stated earlier, landslides often created temporary dams and this flood was probably caused by a breach in such a barrier of a lake. The Indus at that time was already full and ready to transmit a wave. Regarding the damage caused by the flood, Drew[8] says: "In the Gilgit region, in three or four places the flood carried away the half of a village fort built at the edge of an alluvial cliff for the sake of water supply, and also 'Shams' a village of Hunza was carried away altogether."

The next recorded flood took place in 1877 A.D. It started raining in October, 1877 and continued upto January, 1878.

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According to an eye-witness, the sky was overcast for five full months so that not a glimpse of sun could be had. The Wular Lake was full to the brim.[9]

The heavy rains caused water-logging in the fields at a time when the autumn harvest was ripening. The crops were completely destroyed,[10] as a result of which famine visited the land. The detailed account of this famine is given in the next chapter.

The next flood occurred after about a decade's gap in 1889. The details regarding this flood are lacking, except that the flood washed away the house of Mr. Bijex, the State Engineer.[11] Mr. Bijex was given a grant of Rs 3,000 as relief by the Government.

The Flood of 1893

This great flood caused a great damage to life and property. In fact, the flood which occurred about a month earlier had not caused much damage and had lulled the people into a false sense of security. The flood of 1893 was "the highest on record" at any rate, in the nineteenth century. It was the result of continuous rains for 59 hours from 4.P.M. of Tuesday, the 18th of July to 3. P.M. of Thursday, the 20th.[12] The rain fell very heavily during the last six hours especially in the adjoining hills, the snow of which melted at the same time due to bright sun and the great mountains were denuded of snow. There was no appreciable rise in the river till the evening of 20th July. Then it began rising gradually till by 10 a.m. 21 July, after which the level rose very high upto 27 ft.[13] above the lowest water mark on the Shergarhi flood gauge. From the 22nd, the level slowly began to recede.

The readings on the Shergarhi flood gauge taken daily at about 8.30. a.m. were as follows:

18th July	13.5
19th July	14.3
20th July	24.5
21st July	26.9
22nd July	26.0
23rd July	25.7
24th July	21,1

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25th July	19.8
26th July	18.0
27th July	14.9
28th July	14.7
29th July	13.9
30th July	13.0
31st July	12.6

The maximum flood water at Srinagar during the past many years was 5.194 feet above sea level and very few of the protective bunds were higher than 5,196 feet. But on 21st July, 1893, the Jhelum rose to 5.197 feet[14] at Shergarhi and 5.199 feet at the Munshi Bagh, spilling over all bunds.

In those days there was only one Metereological Station at Srinagar. According to the recording taken there, five[15] inches of rain had fallen at Srinagar. A warning to that effect had already been received telegraphically from Anantnag on the same morning. As the floods approached Srinagar, its bridges obstructed the flow of water and converted the country to the south of Srinagar into a vast lake.[16] The river embankment at Munshi Bagh for the most part withstood the flood, but ultimately gave way and water rose over the river embankments.[17] The river broke through the gate which protected the Dal Lake from floods and submerged the lake gardens and spread over Srinagar and the adjoining areas for at least 8 to 10 miles.[18]

It was good fortune of the people that the flood achieved its maximum height during day time.[19] Had it taken place in the night, things would have been much worse. Besides, Raja Sir Amar Singh (younger brother of His Highness Maharaja Pratap Singh) and Pt. Suraj Kaul, the then Governor of Kashmir, were at Srinagar and they did all they could to save lives and property by supplying boats to people in houses threatened by water.[20]

Damage

The wheat, barley and the rapeseed left carelessly on threshing floors were completely destroyed by the July flood.[21] The maize crop was completely submerged and huge quantities of

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grain and fodder were lost.[22] Though there was hardly any loss of life in the plains, crops in low-lying country were completely destroyed. But in the hilly areas many lives were lost as men, cattle and sheep were carried away by torrents.[23]

Six of the seven bridges over the Jhelum in the city were washed away.[24] Only the Amirakadal, the first bridge, stood the shock of the flood, but that too came under water and became impassable.[25] Two iron bridges and the road leading to Kashmir via Kohmari which had been constructed at a cost of several lakhs of rupees, were destroyed.[26] Nearly every bridge on the Jhelum valley road was swept away, including the iron girder bridge at Domel and the Kohala suspension bridge.[27]

Loss of Life

Till 25 July, the only death recorded was that of Mr. Law, a photographer, who on the 21st or the 22nd July, had attempted to cross the Jhelum above the city in a small boat, which capsized and he was drowned.[28] In Srinagar, 17 persons were killed, 16 from drowning and one by a falling house. In the country side, 32 people perished in the great flood. Of these 32 men, 21 were drowned, 5 were killed by a falling house and six by falling of a tree. The total loss of the cattle was estimated at 329.[29]

In the valley, 2,225 houses[30] were destroyed by floods and these houses vary from frail huts of popular wood to the larger and more substantial houses.

The area of cultivated land submerged under water was estimated at 25,426 acres.[31]

The Rainawari area and the villages of the Khas Tehsil were flooded and the people suffered heavy losses. The standing crops were completely destroyed. In the tehsils above Srinagar, damage was less.[32] This area was inspected by Bakshi Parmanand, the Hakim-i-Ala. This is all due to the formation of the country which drains rapidly into the Jhelum.

A great number of radhs (floating gardens) too were destroyed by the great flood. The area of radhs thus destroyed was estimated at 40 acres.[33]

The table below indicates the total cultivated area submerged

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under water, revenue remission proposed, number of houses destroyed and number of cattle-heads killed in the flood.

Sl. Tehsil	Cultivated area submerged. (Acres)	Revenue to be remitted (Rs. Imperial)	No. of houses destroyed	No. of cattle killed by the flood
1. Cherat	520	238	115	14
2. Ullar Vehu	748	685	239	2
3. Dachan Para	126	6	47	—
4. Deosar	60	—	21	113
5. Anantnag	111	22	91	—
6. Sri Ranbir Singh Pura	—	—	10	—
7. Sher Khas with Mir Behri	3944	12638	944	17
8. Donsu	600	1562	14	8
9. Ichh Nagam	753	1683	34	—
10. Lal with Naid Khai	10110	25468	595	68
11. Behru Magam	1969	5278	92	6
12. Krihum	2438	5004	8	17
13. Hamal Zainagir	3270	10881	—	—
14. Uttar Machi Pura	744	1339	15	84
Total	25,426	64,804	2,225	329

Prices

The immediate effect of the floods was that the prices of grains and other essential commodities went up considerably. Roads leading to the city were closed and for weeks together supplies came to the city in small quantities. Price of rice rose from 25 seers to 18 seers a rupee, of wheat from Rs 4 to Rs 5, a Kharwar,* oil from Rs 1-8-0 to Rs 2-0 per six seers and of salt from 6 to 7 seers a rupee.[33]

At the time of this calamity Maharaja Partap Singh was at Gurais. He reached Srinagar on 25th July and on the 31st a,

*Kharwar=Two maunds and three seers standard weight at 80 tolas per seer.

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meeting of the State Council was held to consider ways and means to face the problems created by the devastating flood.

First of all, orders were issued to the tehsildars to get the irrigated channels repaired so as to save the remaining rice crop which was almost in ears.[34] Then. the forests were thrown open and unnecessary restrictions were removed for two months to help the villagers obtain at their own expenses, a reasonable quantity of chil and other cheap wood to rebuild their destroyed houses.[35] Repair of the huge breaches in the river embankments was undertaken. The Public Works Department was instructed to take up the job at once and on 26th August, the services of Mr. Price, an Assistant Engineer, were also made available.[36] The Maharaja further instructed the Public Works Department that those working on these breaches should be paid adequate wages and this work should first of all be offered to the villagers of the submerged tracts.

The Mir Behri cultivators were exempted from begar* for one month to enable them to raise a fresh crop of vegetables and Mr. Nethersole, Incharge, Water Works Department, was instructed to offer them employment.[37]

It was decided to reconstruct five of the city bridges on old design, but with the roadways three feet higher than before, while the Amirakadal and Safakadal were to be replaced by bridges supported on masonary piers.[38] The work of reconstructing the bridges was taken over by the Director of Public works and one city bridge was reconstructed within two months and other fiive within nine months.[39] A temporary bridge at the site of the Safakadal was also constructed.

The State Government took every possible step to supply grains to the people. Besides the State Government's efforts, a wealthy and philanthropic Parsee, Mr. Dhanjibhoy, C.I.E. generously brought large quantities of rice and flour from the Panjab and sent the same to Srinagar for sale to the sufferers at low price. A shop[40] was opened in the hospital premises under the charge of Mr. Knowles, missionary, who supervised the sale.

Fortunately, the output of water-chestnut was quite satisfactory. Besides the above, Dr. Neve Arthur, a missionary in Srinagar, along with Pt. Radha Krishen, a former Chief Justice

*Begar = Forced Labour.

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and Colonel G. Young[41], C.B. were asked to visit the affected areas to rehabilitate the people. This team worked whole-heartedly and the people who had deserted their houses began returning to rebuild their damaged shelters.

Flood of 1894

The year 1894 also witnessed an extraordinary and unexpected flood in the month of June. This time at Srinagar, river rose to a height of about 3 feet below the level recorded the year before.[42] This flood caused comparatively less damage, except in the villages below Srinagar. The crops in this low tract were damaged. This damage did not affect the State Government. Relief afforded to the cultivators of this area was in the form of remission of land revenues amounting to Rs 11,480.[43] Thereafter, the last few years of nineteenth century passed without any serious flood. The first year of the current century was marked by another flood in the valley. This time the neighbouring rivers were also in spate.[44] The level of the Jhelum at Munshi Bagh in Srinagar rose to 5,192 feet[45] on the 17th August, 1901. This flood caused considerable damage.[46] However, since official records are silent, details about the genesis and results of this flood are not available.

The next flood visited Srinagar on 29th March, 1902. The floods are not usually expected in the month of March and the river rose to a height of about 5.190 feet. However, the damage caused by this flood was meagre.[47]

Floods of 1903

The floods of 1903 broke all previous records. Rain fell continuously throughout the valley and over the surrounding hills from July 1 to July 6. After a break of about 3 to 4 days, it again started on the 11th of July and continued till 17th. It again started raining on 21st and continued till 23rd July. The result was that there were two floods in the Jhelum.[48]

The first flood which lasted from 11th to 17th of July raised the level of the river to 5.194 feet above the sea level at Munshi Bagh in Srinagar on 19 July. The first flood took nearly 72 hours to reach Srinagar from Khanabal after filling all the numbals and swamps on the way. Thereafter, the flood gradually abated and by noon on 22 July, the gauge had fallen to

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14.19 or RL 5,189.27 at Munshi Bagh. Now the people thought that the danger for the year was over.

The first flood caused many breaches in the left bank of the river resulting in some damage at Srinagar but the water which overflowed the left bank opposite the Munshi Bagh swept away some crops which had recently been cut.[50]

The second flood came in the afternoon of 24 July. The river started rising again at 2 p.m. and soon rose to RL 5200. 37 feet. It was said that the whole valley had become vast expanse of water. All distinctions of banks and lands were completely obliterated. From the Shankaracharya Hill, the whole valley from one side to the other appeared as one sheet of water.[51]

During the second flood as all the numbals and swamps from Khanabal to Srinagar were already full, the flood water took only 22 hours to reach Munshi Bagh. On 24 July[52] before flood water reached Srinagar a telegraphic information about the flood from Khanabal had already been received by Raja Sir Amar Singh, the Vice-President of the State Council, and the younger brother of the ruling Maharaja. After receiving telegraphic information, Raja Sir Amar Singh issued a warning to the residents of the Kothi Munshi Bagh.[53]

The Dal Lake, after the bursting of Dal Gate took 3 to 4 days to fill up and acted as a safety valve and practically saved the city. The first spilling over took place at 7 a m.[54] On 24 July at south of Gowkadal lock gate between Sunti Kul and Basant Bagh, which when filled up made its way towards Munshi Bagh. The entire length of the bund was submerged in water and the whole area of Munshi Bagh was covered with water except at a few places.[55] The only portions of the city and its neighbourhood that remained above water were small plots of land on both sides of the Amirakadal bridge and the Shergarhi places and its neighbourhood. The rest were more or less affected by water.[56]

As this flood came during day time and people had been warned in advance, there was no loss of human life. But the loss of crops was indeed extensive. The 'Sailaba' circle suffered most in reaped rabi crop. The crops in numbal chakla suffered a heavy loss. The estimated loss of the Kharif harvest was about

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one-sixth of the total cropped area.[57] On the whole, the damage done to the standing crops was heavy. Considerable damage was done to the cultivation on the borders of the lake and especially to the floating gardens (Radhs) large numbers of which were swept away.[58] Inspite of the heavy loss, the output of Rabi and Kharif harvests was estimated at 5887961 maunds,[59] the quantity more than sufficient to sustain the people of the valley for the remaining months of the year.

British Resident in Kashmir, after visiting the flooded areas, noted, "That the villages around the shore of the Wular lake and in the area which Mr. Lawrence described after the flood of 1893 as the *Panjiara Triangle* had suffered most."[60] Many of these villages lost the Kharif crop.

This time the weather, after the floods, remained cloudy and hence the standing rice crops recovered marvellously. The maize and linseed suffered seriously.

Damage done by Flood at Srinagar

On 24 July, 1903, after 12 noon, the whole of Munshi Bagh from Amira Kadal to the foot of the hill was covered with flood water and the charming Panorama turned into a cyclonic sea. After a few days, the foundations of the buildings (under water) began crumbling. Most of the houses which collapsed due to the violent waves were built of stones and mud and could not withstand the flood. Wooden compound walls and railings of nearly all the houses were swept away.

There was 8.5 feet of water[61] on the road from Amirakadal to the foot of the Shankaracharya hill. The tremendous current caused a few serious breaches on the road. A portion of the Gulmarg Road (from the point it breaks off from the Baramulla-Srinagar Road) and the Anantnag Road were also washed away. Besides, Bijbehara Palace and Anantnag Palace were also partially damaged.[62]

The damage done by the flooding of the Jhelum below Srinagar or Chattabal was due to the obstruction caused to the free flow of water between Sopore and Baramulla.[63] However, there was no loss of life.[64]

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Damage

According to the report submitted by the Flood Relief Committee, 83 villages suffered in respect of standing crops, out of which 26 lost the whole kharif harvest and remaining 57 experienced the loss in certain areas in respect of Makki and crops other than shali. The total loss of cattle heads was 625 and the total number of houses destroyed in the flood was 421.[65]

Dr. A Mitra, Superintendent, Central Jail, Kashmir submitted a report regarding the damage sustained by the Jail department, stating that Judicial Hawalat[66], Srinagar, compound walls and fencing of Sadar Court and two godowns in its compound had fallen.[67]

The Secretary, Foreign Department, English Branch, Srinagar also solicited the report of damages caused by the flood, vide Circular No. 3098 of 7th August, 1903. To his reply, a report was submitted by the Superintendent, Reception Department, Srinagar showing some damages done to the godown Shawni, at Shergarhi, Lal Mandi east wing of office and godown rooms in reception quarters.[68]

Horticulture Department suffered serious losses. A large number of young plants, the value of which was estimated by the Director of Horticulture at Rs 1836/- were destroyed. The Sericulture Department and the Settlement Departents fortunately suffered no serious damage. The Hop garden, however, suffered a severe loss.[69] Bunds of the river also sustained much loss.[70] Almost all the bridges across the Liddar were damaged.[71]

Prices

The prices rose exceptionally high. This was not entirely due to the loss caused by floods but mostly due to the callous selfishness and avarice of small body of men who were bent upon enriching themselves at the cost of others. This middle class or the Galladars appeared on the scene when the State Government closed the State granaries for the betterment of the Zamindars and in the interest of the State revenues. These Galladars exploited the situation a great deal. They used to purchase grains from the Zamindars in advance at cheaper rates and later sold those at exorbitant rates. The inhabitants of the

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city had to pay three to four times more than the normal rates for cereals. The State Government made some occasional imports of grains from the Punjab, but even then prices continued to rise high.[72]

The State Government called a meeting of the Flood Relief Committee on Tuesday, the 28th of July, 1903, which was attended by (i) General Raja Sir Amar Singh. K.C.S.I. (Presiding), (ii) Rai Sahib Lala Narayan Dass, (iii) Khan Bahadur Munshi Ghulam Ahmad Khan, (iv) Pt. Man Mohan Nath Koul, Governor, Kashmir, (v) C.M.R. Field Esquire, and (vi) Dr. M. Suraj Bal (Secretary). This Committee authorised the state engineer to start all necessary repairs on the Jhelum valley road, so that communication with the Panjab might remain unhampered.[73]

The second meeting of the Committee was held the following day and there, Major K.L. Kaye, Settlement Commissioner, Kashmir and Mr. F. Anderson, Accountant General were also present. The Committee resolved that revenue collection in affected villages should be suspended and relief work should be started in the town including repairs of roads, buildings, bridges, etc.[74] The Committee also discussed the food problem. The food problem was calculated in the following manner[75]:

The total population of the valley	9,89,196
Annual consumption @ 13½ Chh. per head per day	74,00,000 mds.
For remaining 8½ months (as 3½ months of the year were over)	525,000 mds.
Estimated out-turn of crops	Rabi=3,93,318 Kharif=66,72,234

Further to check the high rise in the prices, import of grains in the valley was encouraged by remitting road toll tax and customs duty, till the 30th of November, 1903.[76] It was notified to the public under the seal and signature of Pt Man Mohan Nath Koul, the Governor of Kashmir, on 3rd August, 1903.

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Relief Measures

The first question dealt with by the Sub-Committee on flood relief, which included the Governor of Kashmir and the President of Srinagar Municipality, was the rehabilitation of those rendered homeless by the flood of 1903. A suitable site near Hari Prabat Fort[77] beyond the reach of floods was selected for the purpose by the Committee. There land was provided to the people willing to construct their houses.

Out of the Taccavi fund, Rs 2300 were distributed among the flood affected villagers. Out of this sum, Rs 585 were given for the purchase of bullocks and Rs 1714 for the seed.[78]

Out of the Taccavi and charity funds, 868 families were given wood and from the cheritable fund Rs 276 were distributed among 158 poor families of the 24 affected villages, apart from those whose houses had fallen.[79]

The British Resident suggested that relief measures in two forms should be implemented:-

(i) Wood for rebuilding the fallen or tottering houses; and
(ii) Money relief in cases where people have really no money or stock of food.

On the advice of the Resident, the Committee, administering the funds divided the *Sher Khas* tehsil into three circles and the same pattern was followed in the flood-affected areas all over the valley. Over each of these was a Circle Officer who was to recommend the details of the relief to the Governor for the issue of orders.

From the State Relief Fund, the number of families assisted in the affected villages was 1380. These families received Rs 2774 in cash, 277 logs of wood, 2617 kharwars of Singhara and Rs 2992 in Taccavi advances.[80] Thus every family received on an average, Rs 2 in cash and nearly two kharwars of Singhara.

The services of Dr. Neve, a missionary in Kashmir, were utilised by the State Government. He was appointed Circle Officer in the northern circle and he served the state in that capacity for the required period and was paid by the State Government accordingly.[81]

Though there was no shortage of the food-grains, the State

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Government gave a contract to Messrs. N. D. Hari Ram of Rawalpindi to purchase 50,000 maunds of maize from the Punjab and simultaneously the arrangements were made for the purchase of Shali from within the State in order to help the poor and to store something to meet any emergency.[82]

Next meeting of the Flood Relief Committee was held at Srinagar on Thursday, the 19th November, 1903 under the Presidentship of Raja Sir Amar Singh. Then, the Committee confirmed the distribution of relief in cash and kind amounting to Rs 24706-9-9[83] in favour of 179 villages, which were affected by the July floods.

The relief given by the four Circle Officers in the whole affected area was in the form of wood worth Rs 9,017 and Taccavi advances of Rs 10,165.

Floods of 1905

Kashmir valley was hit by floods twice in 1905. The first flood occurred in May. This time the water level reached only a few feet lower than the record flood of 1903. The flood occurred owing to the exceptionally heavy rainfall in the middle of May. The river began to rise quickly by the 14th May and after a couple of days, it reached its greatest height.[84] It was believed that no such spring flood had occurred in the last century.

In the lower part of the country, water subsided very slowly and much of the sailaba area remained flooded for the whole month with the result that the rabi crops were entirely destroyed. It was chiefly the northern half of the valley that suffered, particularly the Baramulla tehsil.[85]

Owing to heavy rain in May, 1905, the sherri nala was flooded and bridge over this nala was overthrown by the violent concussion of the large heavy logs and sleepers carried down by the flood. The State Government then sanctioned an amount of Rs. 13,339 for the construction of large pile bridge, about 154 feet long, which was completed at a cost of Rs. 10,295[86] only.

The second flood occurred on the 13th of September,[87] as a result of incessant rains for four days during which the sun too was hot which caused the snow to melt, causing the river to

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rine by 22 feet.[88]

At Srinagar, water was about a foot lower than top of the embankment which protected European Quaters. The rushing flood water, before reaching the city, was checked by the spill channel. But late in the evening of the second day of the flood, the embankment began showing signs of giving way. Water had found its way through rat holes and an hour later a spout of water poured which quickly tore away 40 feet of embankment.[89]

The flood water burst into the gardens outside the bund and the Munshi Bagh and the residency areas were quickly flooded. According to Capt. C.M. Enriques, "From the top of Takhat, the valley looked as one huge lake. Every part of it was inundated and the roads were only marked by straight rows of pollars, which stood out from the flood".[90]

The river Jhelum at the head of the valley at Anantnag rose to within 3 inches of the recorded flood level of July 1903. However, the extent of flood elsewhere fell short of that of 1903 and was less sudden and violent and the losses sustained were, therefore, practically confined to crops.[91]

Damage

The damage caused this time was not substantial. This was mainly due to the flood spill channel constructed the year before.

The September flood affected about seventy-four villages.[92] The damage caused to crops was extensive in 45192 acre area out of total area of 115,784 acres sown.[93] In some estates, both crops were totally lost. Nearly all the roads in the state were seriously damaged as a result of the abnormally heavy rains. The Jhelum valley cart road was very badly blocked by landslides and was severely damaged. Some bridges were also washed away causing serious inconvenience to the government and the common people.[94]

Minor towns on the river banks were practically unaffected. In villages the damages was confined to the loss of crops as on both occasions the water rose slowly and people had time to shift to places of safety with their cattle. Some houses were destroyed and it was rare that where the houses fell, the material

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generally remained with them and was not washed away.[95]

During the September flood, there were only six deaths which were caused by drowning.[96] There was no casualty among the Europeans. Besides, lock gates and embankments were damaged to some extent.

Prices

The abnormal rise in the prices was not noticed anywhere in the State. The prices of the principal food-grains remained normal throughout the Province of Jammu, save in the dtstricts of Mirpur and Udhampur where higher rates prevailed owing to poor output of that year.

In Kashmir, prices of foodstuffs exhibited a significant fall as compared with those prevailing in the previous two years. It was due to the fact that the crop output during the year was above average.[97]

In Ladakh the output was satisfactory and hence there was no rise in the prices. Only in Gilgit Wazarat, the prices especially of some staple foods showed a general tendency to rise.[98]

Relief

Rai Sahib Narain Das M.A., the Public Works Minister of Jammu and Kashmir State Council, estimated the loss caused by the floods as Rs 302085.[99] He further discussed the problem of relief with the State Council and the Resident in Kashmir. The relief distributed among the flood-stricken people was as follows[100]:-

Sr. No.	State	Cash Private	Kind Qty. of Singhara	Price	Taccavi advance for seeds (Amount)
1. Mir Behr	5049	—	—		—
2. City	40178	4750	—		—
3. Mufassil	—	9783	11094	8320	15492
Total	45227	14533	11094	8320	15492

Besides timber aid was given in mufussil by the forest department on the recommendation of the Flood Relief Committee.

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The Maharaja announced the remission of revenues amounting to Rs. 185000[101] for the villages; as proposed by the State Council and also the new assessment in the riverine circles from the following rabi crop. Besides, taccavi grants of Rs. 15000[102] were also sanctioned.

On the request of Sir Raja Amar Singh, a sum of Rs 10,000[103] was also sanctioned for the repair of village embankments damaged by the flood, in Kashmir and the approval of the Maharaja, who was then at Agra, was sought telegraphically.

The State Engineer submitted an estimate of Rs. 26133 for the construction of bunds for the protection of the flood-prone area. He proposed the following bunds:-

(a) Bund from Tungpura to Khushipur Karewa, opposite mile sixth in the Srinagar-Baramulla Road.
(b) A bund from Saddar court to Narbal opposite miles 7 and 8 in Srinagar-Baramulla Road. These two bunds were to protect the land between Dudganga and the Numbal near Batmalu on the Baramulla-Srinagar Road and also the land to its north.
(c) A bund to be put up in the Kansa Numbal for the protection of Jagir Khas.
(d) A bund from Gongbug to Gulwanpur for the protection of the area between Numbal and Dudganga.
(e) A bund from Custom Chowki to the mound of Karalpur.

The Maharaja accorded the sanction to the above proposal, vide order No. 856, dt. 18-6-1906.[104]

Flood of 1909

The next major flood occurred in 1909, for which the detailed information is lacking. The only informative source in this connection is a note on Panimar remissions in Kashmir valley in which Rai Bahadur Lala Bhawani Dass, Revenue Minister, J & K State, mentions the extent of the proposed revenue remission by the State Government on account of the damage caused to the cultivation by this flood. The remissions proposed by the Revenue Minister were[105] :—

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Tehsil	Proposed remission		
	Rs.	As.	P.
1. Kulgam	18210 —	11 —	0
2. Pratap Singh Pura	11789 —	12 —	0
3. Uttar Machipura	2088 —	1 —	6
4. Baramulla	7786 —	10 —	6
5. Awantipura	24188 —	0 —	0
6. Anantnag	(Report of the Tehsildar awaited).		
7. Srinagar	570 —	11 —	0
Total	69,764 —	15 —	3

It is quite evident from the above information that the flood of 1909 was quite disastrous in nature and was spread practically over the whole of the valley. The total loss was estimated at Rs 98393-00.[106]

The amount of proposed revenue remissions suggests the heavy damage caused to the crops. In Srinagar Khas, Uttar Machipura and in Kulgam Tehsil, both kharif and rabi crops suffered a great damage.[107] It is also very likely that a flood of such a magnitude which affected almost all the tehsils of the valley, must have damaged bridges, roads and buildings for which we have no documentary evidence. It must have caused a good deal of hardship to the people of the valley. That it caused a shock to the official machinery of the State Government is clear from the fact that immediately after this flood, the State Government initiated many schemes for preventing such floods in future.

The next flood took place in 1912. It occurred on account of the cloud bursts on the mountains surrounding the valley on the 17th and 18th May, 1912. This flood was averted to a considerable extent by the spill channel. But inspite of this, for about twelve miles the Jhelum valley road from Baramulla to Chakoti, was obliterated and many bridges between these two points were damaged.[108] Unfortunately, there is no authentic information about the losses caused by the flood except that twenty one[109] lives were lost. Thereafter till 1925, no flood of consequence visited the valley.

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Floods in Frontier Districts

Gilgit flood of 1905

The rivers flowing through the Frontier districts were also prone to occasional inundations which were usually caused by the sudden dislodging of ice blocking the rivers. One such flood occurred on the 18th June, 1905.[110] On the morning of 18th June, 1905, a glacier dam burst out in Ishkoman nallah causing violent floods.

The old suspension bridge over the river and the rope bridges of Buleer Sher Khilah and Bargoo were washed away.[111] The Chemogar and Pratap bridges on the Indus river were also in danger[112] but lately these bridges were saved. Gullapur Kilah in Punial Ilaqa collapsed leaving only eight houses standing.[113]

The telegraph line was snapped in the direction of Sharat. The Gupis road was damaged on several points near the river. However, no loss of human life was reported,[114] although crops on the banks of the river were destroyed.

The State Government got constructed a new bridge with a span of 532 feet at a cost of Rs 51014,[115] in place of the old suspension bridge, which had been washed away during the flood.

The year 1906 witnessed a flood not only in the Gilgit river but in the Hunza river too. The Hunza river rose about 50 feet above its normal level. This flood too happened on account of the bursting of a glacier.

The flood waters caused considerable damage to the Gilgit-Hunza Road and many buildings were washed away. The flood in the Gilgit river damaged fifteen bridges on the Gilgit-Shandur Road and three bridges on the Gilgit-Bandipur Road.[116]

In 1912-13, a minor flood occurred in the Shyok river in the Nubra valley of the Ladakh district, resulting in losses to the cultivation and cattle of the vicinity.[117]

Again in 1914, the Ladakh district was ravaged by flood caused by heavy and untimely rain and snow. This time the damage caused was considerable.[118] In the winter of 1914 the flow of Ruppal nalah in Astore valley was blocked by heavy masses of snow causing a flood. The land along the banks of the nallah was submerged and the water channel was damaged

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to a great extent.[119]

Jammu Province Floods

Rivers in the Jammu Province often overflow their banks but seldom cause much damage. However, there are no reports of floods in this region between 1846 and 1891. In 1891 there were floods in mountain streams like the Tawi and the Chenab.[120] Unfortunately, no account of damage caused by these floods is available from records. There were minor floods in the Tawi river on the 7th and 8th July, 1893. The water in the Jammu city rose to the level of roadway of the suspension bridge and the road approaches on both the banks of the river were breached.[121]

Kathua Flood, 1910

The town of Kathua in Jasrota Wazarat was ravaged by floods in July, 1910, when the Kathua stream and, especially the Khad which intercepts the Kathua town overflowed their banks. This Khad overflowed on 16th, 17th and 19th of Sawan, S. 1967 (in July)[122]and the public and private buildings on both the banks were surrounded by waters. The straw houses on the left bank suffered a good deal of damage.[123] However, the loss sustained was small and was estimated at Rs 1569.[124]

The next flood was caused by the phenomenal rains on the 20th and 28th July, 1914, which brought the highest recorded floods in several drainages crossed by the Ranbir Canal. These floods caused no damage except breaches in the embankments of the canal.[125]

Then in 1917-18 the Tawi was in spate. This flood, though a minor one, caused serious damage to the new pumping plant of the Jammu water works in the city.[126]

Protective Measures

To prevent recurring floods, the State Government took a number of protective measures. After the great floods of 1893, the State Government took a few long-term measures, e.g. raising of a sufficiently high bund on the left bank of the river and the construction of two locks for navigational purposes at the

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upper and lower ends of *Isantikul* canal. Special attention was paid to the left bank because in the past floods had usually overflowed the whole area on the left bank of the Jhelum in Srinagar.[127] Work was also started on the Dal Lake embankments to save the villages from further suffering.

These preventive measures were of no avail during the flood of 1903. Therefore, after this great flood, the State Government undertook the construction of the Jhelum flood spill channel. It was completed in 1905.[128] The construction of another bund on the left bank, from the head of the spill channel at the Badshahi Bagh to the Municipal office at Shergarhi was commenced in 1904-05[129] and completed in 1906.[130]

The effectiveness of these measures was proved just after their completion, when in 1905 the valley of Kashmir was twice inundated. On the 13th September, 1905, the spill channel checked the rushing flood waters to a considerable extent and saved the Srinagar city from being inundated. This timely check by the spill channel enabled the bunds to stand the pressure well.[131]

After the flood of 1909, the Public Works Minister of the State Council submitted a memorandum[132] to the Maharaja urging the need for a commission to consider the question of a flood prevention in Kashmir. The Committee consisted of all[133] the ministers except the Home Minister. His highness suggested that two experts in Engineering and irrigation be invited from British India to work in cooperation with the State Engineers to prevent the recurrence of floods.

The State Engineer suggested that the six bridges at Haba Kadal, Nawa Kadal, Fateh Kadal, Zaina Kadal, Ali Kadal and Safa Kadal should be replaced by suspension bridges as they block the river flow considerably during the floods. This job was taken over by Messrs. Richardson and Cruddas of Rawalpindi. The estimated expenditure was Rs 1,83,400.[134] The new suspension bridges were to save Rs 66,000 per annum, which the State Government had been spending almost annually on the restoration of flood damages. It was estimated that the full cost of the new bridges might be saved if they could survive one flood. Secondly, the improvement of the spill channel was emphasized by deepening it by three feet by means of a zigzag channel about twenty feet wide. This channel in a couple of

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seasons would broaden into a straight cut of 100 feet wide or more.[135] The expenditure on this account was estimated at Rs. 26281. The State Engineer suggested that the channel about 6 to 10 feet wide, be made from the Bhimna Nambal across the cart road back into the Jhelum just above Shalteng.[136]

This would be enough to pass sufficient water by means of the spill channel round the city to remove the possibility of flood at Srinagar. Besides, the dredging system was to be made more efficient. These preventive measures were adopted by the State Government for fighting floods in future. The dredging operations which were started in 1905-06, in a way, proved very useful. An area of about 6100 acres was reclaimed from around the water lake and was allotted by the State Government to the cultivators for growing paddy. By this arrangement, on the one hand, the poor cultivators were benefited, while on the other, the State exchequer received an additional revenue to be utilized for public welfare at large.

However, there was no major flood for a generation after 1930 and during this period, dredging operations came to be looked upon by the State as a useless expenditure. Hence the dredgers were sold as junk in 1917. The immediate result was that the river bed began sitting up again, and during the flood in August, 1928, the low-lying parts of the city, which by then had been haphazardly extended, were inundated. The water-logging also caused damage to standing crops. This flood gave a jolt to the State Government, which again woke up to the urgent need of flood protection measures.

However, the State Government, instead of taking a long-term view of the problem, again started building high bunds round the low-lying areas of the city—the chief aim being to save the city at the cost of the rest of the valley. This was in no way a wise step and proved useless in the years to come.

Protective Measures in Jammu

A few small protective measures were carried in the Jammu Province also. In 1904-05, steps were taken to protect the suspension bridge and also to prevent the Tawi river cutting its way between the bridge and the Rani Temple below Gumat. To protect Kathua from floods, the construction of the boulder

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spur in Kathua was undertaken on the recommendations of the Divisional Engineer, Jammu Division. Besides, some small protective measures were carried out in Hamirpur Sidhar also.[137]

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    (ii) G. O. I. Fgn. Intl. B. Sept. 1904, Nos. 75-76.
51. (i) A. R. 1901-04. p. 213.
    (ii) G. O. I. Fgn. Intl. B. Sept. 1904, No. 75.
    (iii) A. R. 1904-05, p. 84.
    (iv) Neve Arthur., op. cit. pp 166-69.
    (v) Field G. M. R., Note on the floods in the river Jhelum Kashmir valley, July, 1903, 13th November, 1903-Sardar Ganda Singa's Report on floods in Kashmir, July, 1903.
52. JK. Pol. No. 163 of 1904.
53. J & K. Pol. No. 166. p. 71 of 1903. This warning notice was also conveyed to the resident in Kashmir at Gulmarg vide Tel. No: 4364. Then resident replied vide Tel. No. 1536 to Vice-President of the State Council to instruct P. W. D. to take all the possible measures for maintenance of bunds.
54. G. O. I. Fgn. Intl. B. September 1903 No. 130-133.

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55. G. O. I. Fgn. Intl. Sept. 1903 No. 130-133.
56. G. O. I. Fgn. Intl. B. Sept. 1904, Nos. 75-76.
57. JK. Pol. No. 11 of 1903.
58. G. O. I. Fgn. Intl. B. Sept. 1904 No. 75-76.
59. JK. Pol. No. 11 of 1903.
60. (i) JK. Pol. No. 92 of 1903.
    (ii) JK. Pol. No. 11 of 1903.
61. G. O. I. Fgn. Intl. B. Sept. 1904 Nos. 75-76.
62. G. O. I. Fgn. Intl. B. Sept. 1904 Nos. 75-76.
63. Ibid.
64. G. O. I. Intl. B. Sept. 1903 Nos 130-133.
    This was also reported by the Resident in Kashmir, Srinagar to the Foreign Secretary, Simla vide Telegram No. 4737 dated 20 July, 1903.
65. (i) JK. Pol. No. 11 of 1903.
    (ii) JK. Pol. No. 92 of 1903.
66. JK. Pol. No. 11 of 1903.
67. JK. Pol. No. 11/A of 1903. This information was supplied by R. Mukerjee, Esquire, Chief Justice, Kashmir to the Judicial member of the State Council vide his letter No. 808-E dt. 31st October, 1903.
68. JK. Pol. No. 30-P-40 of 1903.
69. JK. Pol. No. 11-A of 1903. Major K. L. Kaye, Settlement Commissioner, Jammu and Kashmir State reported this information to the Revenue member of the State Council vide No. 431 dt. Srinagar, 26-9-1903.
70. (i) JK. Pol. No. 64-D-24 of 1903.
    (ii) JK. Pol. No. 11-A of 1903.
71. (i) JK. Pol. No. 166-P-71 of 1903.
    (ii) Civil and Military Gazette, Thursday, 22nd October, 1903.
72. JK. Pol. No. 166-P-71 of 1903.
    In its column published the report on "Kashmir after the flood" by "Circumspicio".
73. JK. Pol. No. 11 of 1903.
74. JK. Pol. No. 11 of 1903.
75. Ibid.
76. Ibid.
77. JK. Pol. No. 92 of 1903.
78. Ibid.
79. Ibid.
    Note: Governor Kashmir informed the Revenue member of the State Council vide letter No. 2696 dt. 20.9.1903 "That a sum of Rs 4589 for fallen houses and Rs 283 as relief to distressed persons have been distributed among the people of Mir Behri today."
80. JK. Pol. No. 92 of 1903.
81. JK. Pol. No. 11 of 1903.

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82. (i) JK. Pol. No. 92 of 1903.
    (ii) JK. Pol. No. 92 of 1903.
83. JK. Pol. No. 92 of 1903.
84. G. O. I. Fgn. Intl. B. Eebruary, 1906, Nos. 199-207
85. From Col. J. C. Pears, I. A. Resident in Kashmir to Sir Louis W. Dene, K. C. I. E. Secretary to Government of India in the foreign department, Calcutta, No. 11 C.A. dated, Camp Akhnoor, the 25th December, 1905-(G. O.I. Fgn. Intl. B. Feb. 1906 (Nos. 199-207).
86. A. R. 1905-06. p. 86 3. A. R. 1905-06, p. 86.
87. Ehriques, Capt. G. M. *The Realm of the Gods*. p. 102.
    Note: Resident in Kashmir, Gulmarg wired Foreign Secretary Simla vide Tel.: No. 1012 G, dt. 15-9-1905, "That owing to exceptionally heavy rainfall on 10th, 11th and 12th river Jhelum at Islamabad reached flood level of 1903."
88. Col. J. C. Pears to L.W. Dane, 25th Dec., 1905, G.O.I. Fgn. Intl. B. February, 1906, No. 206.
89. Enriques, Capt. C. M. op. cit., p. 103.
90. Ibid.
91. G. O. I. Fgn. Intl. B. February, 1906 Nos. 199-207.
92. From Pt. Man Mohan Nath Kaul, Governor of Kashmir to Vice President of State Council, Srinagar, No: 2242 dt. 20-9-1905.
93. G. O. I. Fgn. Intl. B. February, 1905; No. 199-207.
94. A. R. 1905-06 p. 78.
95. G. O. I. Fgn. Intl. F. February, 1906 Nos. 199-207.
96. From Pt. Man Mohan Nath Kaul, Governor of Kashmir to Vice President of State Council No. 2243 dt. 20.9.1905. JK. Pol. No. 31 of 1905.
97. JK Pol. No. 103 of 1905.
98. A. R. 1905-06, p. 44.
    Note: The casualties reported by the Superintendent of police, Muzzafarabad-One; Gurais-One; Uri-One; Lalvhak-Two; and Srinagar-One (Total-six).
99. J.K. Pol. No. 103 of 1905.
100. Ibid.
101. G. O. I. Fgn. Intl. B. February, 1906, Nos. 199-207.
    Note: Private help means the help given by some private institutions such as Missionary Schools, etc.
102. G. O. I. Fgn. Intl. B. February, 1906 Nos. 199-207
103. Maharaja Kashmir (Hardwar Oflice) to General Sir Amar Singh (Satwari), Tel. No. 150 dt. 28.11.1905. J. & K. Pol. No. 31 of 1905.
104. (i) JK. Pol. No. 31 of 1905.
    (ii) A. R. 1905-06. p. 82.
105. Rai Bahadur Lal Bhawani Dass: Note on the Panimar remiss ons in the Kashmir valley.
106. JK. Pol. No. 2/P-101 of 1909.

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107. D. O. No. 65 dt. 9-8-1909 Lala Bhawani Dass, Revenue Minister to Governor, Kashmir.
(Note: On Pantmar remission in Kashmir valley-1909).
108. G. O. I. Fgn. B. June, 1912. No. 187.
109. G. O. I. Fgn. B. June, 1912. No. 187.
(Resident in Kashmir to Secretary Government of India, Home department-Tel. No. 3017 dt. Srinagar, 22nd May, 1912).
110. A. R. 1905-06 p. 90.
111. Ibid.
112. From Wazir Wazarat Gilgit to Vice President State Council Srinagar Tel. No. 1206 dt. 18-6-1905 time 1346 hours.
JK. Pol. No. 72/A-H of 1905.
113. From Wazir Wazarat Gilgit to Vice President State Council Tel. No. 1264 dt. 19-6-1905 time 1130 hours. JK Pol. No. 72-A/H of 1905.
114. From Wazir Wazarat Gilgit to Voice President State Council Tel. No. 1264 dt. 19-6-1905 time 1130 hours. JK. Pol. No. 72-A/H of 1905.
115. A. R. 1905-06 p. 90.
116. Assess, Report, Gilgit, 1917. pp. 6-7.
117. A. R. 1912-13 p. 33.
118. A. R. 1914-15. p. 33.
119. Assess Report, Gilgit, 1917. p. 7.
120. A. R. 1893-94 p. 52.
121. A. R. 1893-94 p. 52.
122. JK. Pol. No. 223/p-17 of 1910.
123. Wazir Wazarat Jasrota to Governor Jammu, 21st Sawan, S. 1967 JK. Pol. No. 2231P-17 of 1910.
124. Report from Supdt. Public Works Minister's office.
JK. Pol. No. 223/P-17 of 1910.
125. A. R. 1914-15 p. 67.
126. A. R. 1917-11, p. 34.
127. A. R. P. W. D. 1904-05 p. 60.
128. (i) A. R. 1901-04 p. 476.
(ii) A. R. P. W. D. 1903-04 p. 4.
129. (i) A. R. 1904-05 pp. 84-85.
(ii) A. R. P. W. D. 1905-06. p. 6.
130. (i) A. R. 1905-06 pp. 82-83.
(ii) A. R. P. W. D. 1905-06 p. 6.
131. G. O. I. Fgn. Intl. B. February, 1906, No. 206.
132. JK. Pol. No. 2/P-101 of 1909.
133. His Highness's Order No. 1795 dt. 9-11-1909.
JK. Pol. No· 2/P-101 of 1909.
134. State Engineer Kashmir Durbar to Public Works Minister letter No. 1443-J dated Jammu, the 2nd March, 1910.
JK. Pol. No. 2/P-101 of 1909.

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135. Major A. J. de. Lotbiniere, C. I. E. R. E., State Engineer Kashmir Durbar to Public Works Minister J. & K. State No. S. J. dt. 16-12-1910, JK Pol. No. 239/1-25 of 1910.
136. JK. Pol. No. 239/1-25 of 1910.
137. (i) J. K. Pol. No. 223/P-17 of 1910,
(ii) J. C. Pears to Sir L. W. Dane, 23rd April, 1906. G. O. I. Fgn. Intl. A. June, 1906, Nos. 112-14.

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CHAPTER III

FAMINES
(1846-1899)

Nature and Causes of Famines

Famine has been defined as "a state of extreme hunger suffered by the population of a region as a result of the failure of the accustomed food supply."[1] This description of the calamity holds good only in primitive and medieval economies. For want of proper means of transport and well-established channels of trade, man in such conditions had to subsist on food raised either by himself or by others in his immediate neighbourhood. The people of the affected region could not look to the adjoining areas to make up for the deficiency in their food supply with the result that the rich and the poor suffered alike.

The State of Jammu and Kashmir was sadly lacking in good roads till the great famine of 1877-79 A.D. It was only after that famine that the necessity of roads and proper transport facilities was seriously felt by the State Government.

Food Crops

The people of Jammu and Kashmir subsist for the most part, on cereals, pulses and vegetables. As far as grain crops are concerned, there are wide variations in the types raised and consumed in the different parts of the State. Rice is the staple food of the people of the valley, while the people of the Jammu Province depend largely upon wheat, barley and maize etc. People in hills live on barley, giram, bajra etc.

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In the Kashmir valley only, one crop i.e. rice was raised in the summer. No crop could be raised in the winter months owing to very low temperature and heavy snowfall. Therefore, a famine in the valley usually resulted from the failure of the kharif harvest alone.

Rainfall and Crop Production

In a State like Jammu and Kashmir, rainfall must play a crucial role in determining the yield of crops. The cause of famine in Jammu was usually totally different from that in Kashmir. In Jammu, it was generally the result of drought, whereas in the Kashmir valley it was due to excess of rains.

The principal carriers of rain are two periodic winds, namely the summer and winter monsoons. The annual rainfall varied from 50 to 70 inches in the outer hills, 30 to 40 inches in the Kashmir valley and less than 10 inches in the frontier districts of Ladakh and Gilgit.[2]

The scanty rainfall in the frontier districts seldom affected cultivation, for there agriculture depended almost wholly on snowfed kuhls. Lack of water was no problem for cultivation in most part of the State. But the irregularity of rainfall and its seasonal nature created problems. In some parts of the Jammu Province, for instance, where crops mostly depend on rainfall, there were frequent dry spells which caused local famine.[3] In Kashmir, on the other hand, heavy and untimely rainfall quite often caused floods which damaged crops.[4]

In Jammu, the land along the Punjab border is plain, while the rest is hilly. The lower tracts yielded all the usual crops, chiefly maize, barley and wheat, while the higher tracts produced saffron, buck-wheat and mountain barley.[5] The hot tracts in Jammu province, viz., Kathua and Jasrota were irrigated by the Ravi and Ujh rivers and were not wholly dependent upon rains. The Kandi area, which lay in the north of Kathua district, was a vast stretch of burning sand.[6] Here the crops totally depended upon timely rains. And beyond the Kandi tract on the slope of the hills, cultivation was a gamble, because excess of rains caused water-logging while its shortage resulted in an unbroken spell of hot weather.

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In Kashmir, rice was grown in plenty, wherever adequate irrigation facilities were available and in non-irrigated areas, maize, barley and wheat were grown.

In Ladakh cultivation was carried out wherever the ground was somewhat level and irrigated. Gram and beardless barley were the most useful crops of this region.[7] In Gilgit, there were narrow strips of cultivable land[8] and the cultivation was dependent upon irrigation carried out by means of channels known as kuhls fed by glaciers.

Untimely rainfall also proves destructive to crops and produces famines even in areas where rainfall is fairly high. Vagaries of seasons also have far-reaching effects upon the fortunes of cultivators.

Cultural Operations

In the Jammu Province, there were usually two crops in a year, namely, the winter or the Rabi and the summer or the Kharif. InKashmir Province, the land generally yielded one crop a year. There were some intensely cultivated land in the neighbourhood of Srinagar and some other towns, which produced a number of crops in a year. The autumn crops, such as rice and maize, were sown in the months of September and October.[9] Wheat was sown in the winter months in those areas where the climate favoured its cultivation.

The sowing of major Rabi crops took place from the beginning of March to the middle of May. In the areas of extreme cold, where only one crop was grown in a year, May was the month of sowing.[10]

Famine of 1831

The last recorded famine occurred in 1831 in the Kashmir valley. Kashmir was then under the Sikhs and Sher Singh was the Governor whose name is still associated with this famine in public memory.

It was a very severe calamity. The position of food-grains was very acute. The situation was further aggravated by the undue interference of Jamadar Kushal Singh, a very influential man. The inefficiency of Sher Singh did not remain hidden for long

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to the Lahore Durbar. Finally Colonel Mian Singh was deputed by the Sikhs. He brought grains and eggs from the Panjab and restored normalcy. The people of the valley suffered so much during 1831-32, that for generations they dreaded even the memories of that awful experience.

Famine of 1864

During the reign of Maharaja Gulab Singh either there was no famine worth recording or there was no arrangement as such to record such events. At least there is no evidence of famine or famine like conditions till 1864, when a severe famine visited the Kashmir valley for the first time. The probable causes for this calamity were the failure[11] of Shali crop and the inefficiency of Wazir Pannu,[12] the then Governor of Kashmir.

The Shali harvest was poor that year and by spring the people started facing scarcity. The official machinery was so corrupt that proper distribution of ration was hardly conceivable.[13] The officials cared more to fill their own pockets rather than to help the needy. Though plenty of corn was available, the poor did not get enough to live. As soon as the actual position came to the Maharaja's notice, he replaced Wazir Pannu by Diwan Kirpa Ram,[14] who was well known as an honest and efficient administrator.

Immediately on his arrival at Srinagar, Diwan Kirpa Ram resorted to physical check-up of the state godowns and found that 60,000 kharwars* of grain was available. The first step he took to avert the calamity was that he caused the available quantity to be sold freely in the bazar[15] and thus relieved the situation. Thereafter nobody felt any hardship.

The Maharaja sent for large quantities of grain from the Panjab and then it was sold cheap to the people of Srinagar. Besides, grain worth a lakh of rupees was distributed free among the poor.[16]

Diwan Kirpa Ram collected 60,000 kharwars of new rice as revenue from the ensuing Shali crop and thus refilled the store, which had been exhausted during the previous months. The Diwan got distributed one kharwar of Shali to each family free of cost and thus overcame the calamity.[17]

*Kharwar=Two maunds and three seers, standard weight at 80 tolas per seer.

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The famine of 1864 A.D. was largely man-made in the real sense and was brought under control as soon as the administration was cleaned to a certain extent. There was no loss of life due to starvation and the State Government had not to face much difficulty in alleviating the distress of the poor. The ensuing good harvests completely restored self-sufficiency in food.

Famine of 1877-79

After the famine of 1864, the next recorded famine of great magnitude occurred in 1877 and lasted till the end of 1879. The whole of India was then in the grip of a famine.

Famines in other parts of India occur usually owing to the scarcity of rain. In Kashmir they are mainly caused by the heavy and often untimely rains and snow. Again the situation in the valley is quite different from that obtaining in other parts of the State where want of rain causes the failure of crops and leads to a famine or famine-like conditions. But, Kashmir valley in recorded history has never witnessed any drought. It was an excess of water that destroyed crops.

The famine of 1877-79, one of Kashmir's major catastrophes in the nineteenth century, was also the result of untimely rain and heavy snow. Starting in October, 1877, the rains continued for months together. According to an eye witness, the sky was overcast for full five months so that not a glimpse of the sun could be had.[18] The Wular lake was full to the brim, and as though it were not enough, the valley was rocked by occasional earthquakes. The heavy rains caused water-logging in the fields at a time when autumn harvest was ripening.[19] The calamity caused a considerable reduction in the population of the valley.

Although the famine of 1877-79 was mainly the result of heavy rains, there were certain other factors too that aggravated the situation.

Causes

In the first place, the continuous rains which fell from October 1877 to January 1878[20] may be considered as the chief cause of the calamity. These rains were followed by heavy snow at a

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time when rice and maize were ripe; they were beaten to the ground.[21] In that year the Autumn crops were good. The rice and maize, which had been cut, were stackcd wet. Soon the grain became black and rotten.[22] Whatever little was left could not be harvested because the fields were under deep water. The reaping operation was delayed due to procedural difficulties.[23] As per the existing system of revenue collection, the cultivators were allowed to cut their crops only after the revenue assessment had been made by government officials. This system had always stood in the way of timely harvest. Had such a system been not in operation the crops, which were reaped before the commencement of rains in 1877, would have been saved by the cultivators by covering the harvested crops. Thus the continuous rains hindered the reaping operation and made waste of whatever little had been cut before the rain set in.

Secondly, the "sail of grain" was a state monopoly, and though the state sold grains at extraordinary cheap rates the officials incharge did not always sell it to the people who most needed, nor in the quantity they required."[24]

Their favourites and the influential persons would get as much as they wanted, but for the common men, stores would be kept closed for days together. Private trade in food-grains could not be conducted and when the stocks in the country fell short they could not be replenished through private efforts.

Thirdly, the Maharaja had no direct control over the people. He depended mainly on the Chief Minister and the State officials, who always kept the realities hidden. The Maharaja came to know only when the people started dying in thousands.[25] When it was evident that there would be no rice or maize for food, an order was issued to exhaust the state stock at the rate of Rs 1-4-0 per Kharwar, whereas the price prior to this was Rs 3-0-0 per Kharwar. Middlemen atonce bought up wheat and barley at this fixed rate and afterwards at the time of acute shortage retailed it at an exorbitant rate of Rs. 19-0-0 per Kharwar.[26]

The officials of Kashmir were not trustworthy. The Maharaja's charity was turned by them into a source of profit. "Even the turnip seed which was wisely despatched to Kashmir was

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intercepted by these unscrupulous men and in its place rape-seed was sold to the villagers."[27]

Fourthly, when terror spread in the valley men never thought of sharing their stocks of food with their relatives, but greatly devoured all they could lay their hands on. Men ate twice or thrice the quantity they did in normal times and still remained hungry. There was a 'jin' or demon in every one's body and that 'jin' had to be fed.[28]

Fifthly, during the famine, people of the valley suffered terribly because of its relatively isolated position.[29] The means of transport and communication were insufficient to cope with the need for an increased import of foodgrains into the valley at the time of emergency. There were no motorable roads connecting the valley with the adjoining states. The means of transport and communication were rough and inconvenient in the extreme, so that men instead of animals had to be used as carriers of goods.

Lastly, people of the valley were themselves responsible for making the food shortage more acute. By the spring of 1878 the state stocks were completely exhausted and even grains for seed were not available.[30] To obtain the seeds for the coming autumn crops an order was issued to make house to house search. By this time the people were demoralised to the extent that instead of making over their scanty stocks to the greedy and unscrupulous officials they hid their grains in the damp earth or poured these into the river.[32]

All these factors in combination aggravated the situation to such an extent that it went out of control of the state government. The calamity remained in full swing for about 2½ years and the people of the valley suffered a heavy loss of life and property.

Extent of Affected Area

No corner of the state and particularly of the valley remained unaffected.[32] In the valley the whole of the autumn crop was completely destroyed standing in the fields itself. As the winter drew to a close, the cattle began to die for want of fodder. Even the birds took flight to far-off places.[33]

The only hope of the people and the state government was

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the ensuing spring harvest. But to their misfortune, the spring harvest of 1878 was also damaged to a great extent by the untimely and heavy rains. Damage to the fruit crop that year was considerable. The hungry people devoured even the blossoms. Vegetables too were completely destroyed by a new type of worm, which appeared in the valley exactly at the same time.[34] Now the people were left with no hope. They were compelled by their stomachs to resort to oil cakes, rice chaff, the bark of alm and yew and even grasses and roots, and these things hastened their deaths. The people were absolutely demoralised and acted like ravenous beasts, each struggling for his own life.

Migration

Seeing no hope for survival in the valley, people in thousands started fleeing to the adjoining Panjab. Their migration was checked by nature as well as by the state government. first of all they had to face hardship as there was no path convenient to leave the valley. All the mountain routes were rough and dangerous. Secondly, migration according to the state government rules was prohibited. Nobody could leave the state territory without the prior permission of the Maharaja. As a result, people often followed unknown routes and perished on the way. When the Maharaja became fully aware of the tragic lot of the people, he issued an order suspending the old system of Rehadari under which nobody could leave the valley without the permission of the Government.[35] An announcement was made that anybody could follow any route to the Panjab without the least fear of the Durbar. It happened towards the end of 1878. With the suspension of this 'Rehadari' system, many weak survivors tottered over the passes to the Panjab. "The door of hope was, however, opened too late for the numerous refugees who succeeded in reaching the open country."[36]

Prices

Before the failure of the Kharif harvest in the valley in 1877, the food scarcity had been felt in Muzzaffarabad, Poonch and Kishtwar. The situation was, however, sought to be met by the

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cultivators of the valley, who sold their surplus stocks pinning their hopes on the ensuing kharif crop, which they expected to be good. But, to their misfortune, the kharif crop too was destroyed, resulting in food shortage and sharp rise in the prices of foodrains in the valley.

Before the famine of 1877-79 a rupee would buy 37 kgs. to 46 kgs. of rice or 5 kgs. of meat or 27 kgs. of milk.[37] Fruit was so plentiful that mulberries, apples and apricots near the villages were left to rot on the ground. And fish near the rivers could be bought for almost nothing. During the course of famine, the acute shortage of foodgrains caused sharp rise in the prices. The price of Shali in 1879 rose to Rs. 1½ per Kharwar.[38] The Maharaja ordered the purchase of grains worth about a lakh of rupees from the Panjab. On 28th October, 1878, Mr. Henry Sahib Bahadur, Officer on special duty in Kashmir, Hon'ble H. S. Cunningham and Marasala Sahib, the Secretary, Government of Panjab arrived at Jammu to discuss the famine situation with the Maharaja. In a meeting it was decided that two lakh maunds of grains be purchased one lakh each from the Panjab and the State itself. The grains thus purchased were to be brought to Srinagar by the beginning of the spring season. In that meeting the system of sale of grains was also devised. It was decided that the poor who were unable to purchase the grains should be given free, the rich, however, should be charged the full cost price.[39]

The State Government deposited one lakh rupees with the Sialkot Treasury for the purchase of grains. The Panjab Government made an agreement with Mr. Russel and Seth Ram Rattan separately to purchase 50,000 maunds of grain from each of them and to have it despatched to the valley through Bhimber and Poonch via Kohmari, so that it reached Kashmir valley by the 15th of June, 1879.[40] Dr. Watson was to check the quantity of grains. By the end of June, 1879, the total amount of grains imported in to the valley was 131561 maunds.[41]

Besides, an irshad was issuad saying that "any one who imported food-grains to the valley worth Rs 20,000 would be awarded Rs 500/- cash and Rs 500/- as khilat and would in add-

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ition receive the pleasure of His Highness in the form of remission of actroi duty.[42]

Food-grains purchased from outside cost the state Rs 15-14-6 per kharwar, but it was sold at a subsidized rate of Rs 4-4-0 per kharwar. About 1,95,774 maunds of grain were imported and the State Government spent Rs 397004-9-0 on it. The average cost of a maund of grain was Rs 20-4-0 and the State met a loss of Rs 3364195-3-0 by selling the same at Rs 3-1-6 per maund.[43]

For the distribution of food-grains in the valley, His Highness appointed a Committee of thirteen members comprising Nilamber Mukerjee, Mardan Ali Khan, Gulam Gilani and Abdul Qadir.[44] For a proper and fair distribution, the Committee thought it necessary to take census and to achieve this, two attempts were made in 1878 but nothing positive was achieved.

The State Government opened 33 alm houses in the urban areas and 27 in the various tehsils for the poor and the orphans and apart from this, a few alm houses were set up on the route passing through Banihal and Kohala to provids relief to the migrating persons. The State Government spent about Rs. 88145-13-0 on these alm houses.[45] In addition to this, certain construction works such as laying out of pathways and roads were started.

Apart from the remedial measures adopted by the State Government, a certain amount of relief work was done by public institutions, like the Church Missionary Society. During the famine, gratuitous relief was given regularly at the hospital opened by them. Often as many as 20,000 supplicants assembled at one time. An orphanage too was started with the help of Mrs. Downes and at one time it had as many as 400 inmates. When the famine had subsided, all orphans were claimed by their friends.[46]

Mortality

No accurate idea can be formed of the extent of mortality caused by the famine of 1877-79 A.D. Dr. Elmsile, who had resided in the valley for six years as a medical missionary estimated the population of the valley at 402,700 of which 75000

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were Hindus and the rest Musalmans. The city of Srinagar accounted for 1,27,400 and the rural population amounted to 2,75,300. The population of Srinagar was reduced from 1,27,400 to 60,000 only.[47]

G. L. Kaul, a later historian, who bases his information on the verbal evidence of old people of the valley, states that out of the total population in the valley only two-fifths survived. A contemporary and a far more reliable historian, Pt. Anand Kaul, puts the ratio of the dead as two thirds of the total population. However the mortality was heavy among the villagers.[48]

In the city the shawl weavers were affected most during the famine. Mr. Long, a French shawl merchant and a resident of Srinagar states, "Whereas in former times there were 30,000 to 40,000 weavers in Srinagar, only 4,000 remained after the famine."[49]

On the whole, the death rate was very high. The corpses of those who had perished were left abandoned or were hastily dragged to the nearest well or hole until these became choked with dead bodies. Dogs wandered in troops preying upon the unburried corpses.[50]

Such was the cruel fate of the Kashmiri people during the famine. Still many officials in high places were apathetic to the lot of people and sometimes even helped in keeping up the prices and intercepting the grain which was sent over the hills for the relief of the dying.

Mr. Wade did splendid work during this famine. He employed a large number of coolies on famine relief works, repaired roads, cleaned and dug canals, filled up foul holes, levelled uneven grounds and planted trees. Mr. Wade had a great terrace cut across the north side of the Rustam Gaddi Hill which subsequently formed a magnificient site for the extension of the rapidly growing and developing mission hospital. In June 1879, Cholera appeared to aggravate the miseries of the people. Dr. Downes toured various districts and treated over a thousand of the patients.

During these three most disastrous years ever experienced by Kashmir, when famine and disease were stalking the land, Dr. Downes and Mr. Wade were engaged in combating diseases and in fighting famine.[51] The Gujars of the mountains were

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the worst sufferer s and many orphan girls were sold to the city Amirs.[52]

An eye witness account of 1878, as left by Mr. Wade, makes an interesting reading. Among other things, it states, "Today I have ridden through a great part of the city and saw a large number of persons especially children and women whom death has certainly marked for his own very shortly. Half a dozen times I tried to buy and distribute some kulchas—small cakes made of flour of Indian corn, rice, wheat and was often mobbed. Poor children crept from underneath the boards of the closed shops, and others from holes and corners that pariah dogs generally occupy and surrounded my pony. Pardah women and apparently most respectable men, stopped and begged and struggled for a piece of bread. I found it impossible to keep the people from thronging me or to maintain anything like order. Directly I obtained any kulcha, the hungry pressed upon me, the stronger pushing aside the weaker and all reaching forth their hands, and begging or screaming they laid hold of my coat, they took bread out of my pocket."[53] Such was the awful situation during the famine.

During this period when the condition of people in the valley was miserable and the State Government frantically exploring all possible means for their survival that certain Anglo-Indian newspapers were continuously writing about the misgovernment of Kashmir. They were probably incensed by the Maharaja's rather independent attitude towards the British Government.[54]

They brought a charge against the Maharaja that in order to control the expenses of feeding his people during the famine actually had drowned them by boat in the Srinagar lake.[55] The Maharaja declined to pocket this calumny quietly and at his request "A Mixed Commission was appointed by the Government of India to enquire into the truth of the story."[56]

The Commission on enquiry found no truth in these hideous charges. The people said to have been drowned were discovered to be living and were actually produced before the enquiry Commission. Three persons, viz. Hargopal Saligram and Daya Ram were held responsible for spreading the false rumours and the final report of the case was sent to the Indian Government.[57] Thus the Commission exonerated the Maharaja of the false

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charges against him.

Mr. Lawrence, the Land Settlement Commissioner, during the reign of Maharaja Pratap Singh, interviewed the people during his tour of the villages and also witnessed many after-effects of the famine. He observed that untimely snow and rain might fall again when the rice and maize were ripe for the sickle. But he added, "I don't think that such an awful famine revisits the valley", because the government had recognised the consequences of bad economy and as a result had changed the policies. The great lesson which the government learnt was not to repeat the order of searching the houses for food-grains in future. The government also abandoned the policy of leaving no surplus with the cultivators.[58]

Jammu Province

The famine of 1877-79 affected almost all the parts of the State including the Jammu Province in varying degrees of intensity. It is evident from the available records that the tehsils of Riasi and Kotli, suffered a lot. In the Kotli tehsil, the failure of kharif harvest in 1877 resulted in famine which lasted 28 months.[59] The severity increased with the advent of the famine-stricken people of the Kashmir Province. The hungry people recognized no law, social or moral, and taking advantage of the adage "Everybody to himself", began to flee in every possible direction and struggled for existence.[60] As in other tehsils, the famine of 1877-79 in this tehsil also extended over a period of about 2½ years.

The livestock in the tehsil was, however, less exposed to its bitter severity on account of the proximity of hills. Huge areas were neglected and deserted with none to look after them, the possessors having migrated elsewhere.[61]

The Tehsil of Ranbir Singh Pura also suffered much. The food shortage was so acute that people of this Tehsil lived on mena—a fodder grass and when that too was not available they fled to happier places.[62] The Nowshera tehsil was also equally affected. The people here witnessed very hard time.[63]

The other tehsils of Jammu Province, where sufficient irrigation facilities were not available, also suffered heavily. On the whole, there was a great scarcity throughout the Province.

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Frontier Province

The frontier districts of Ladakh and Gilgit did not remain unaffected. In the first year of this calamity, Ladakh faced no difficulty, but on the other hand supplied 520 maunds of Gram and wheat to the Kashmir Province and also gave Rs 938/- to the State Government for the relief of the sufferers.[64] But in subsequent years, Ladakh district where the harvests depended upon rains also suffered because of untimely rains in 1877. The crops failed to a large extent. But in the following year, the timely rains came to the rescue of the people and food-grains just sufficient for the maintenance of the people of the region became available.

The famine of 1877-79 was a great human tragedy aggravated by the indifference and corruption of the official machinery. But as soon as the Maharaja became aware of the famine and its devastating effects, the State Government was aroused to a sense of urgency. Steps were taken to mitigate the distress and the authorities also adopted certain long-term remedies. Famines visited Kashmir even after but none was that severe. The years 1877-79 may be regarded to mark the beginning of a new outlook of Jammu and Kashmir State in respect of agriculture and food supplies.

Change in the Policy of State Government

During the famine, observes Mr. Lawrence, the policy of the State Government towards the city people on one hand and to the cultivators on the other was different.[65] The State officials were busy saving the city at all costs from the horrors of famine and little mercy or consideration was shown to the cultivators. He says, "If the tehsildar had not been hampered by the requisitions for the city, he might have kept his villagers together, might have exploited the wild foods of forests and the swamps, and might have induced the people to let the fruit trees bring their fruit to their maturity. But the villagers fell into the panic, there was no one to guide them, and orders such as those searching the houses for grain made every one suspect that the city alone was to be helped." This policy was changed after the famine by recognizing it as a bad

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economy to sacrifice the interests of the cultivators to the welfare of a handful of residents of a city.

In the second place, there was neither any organisation in charge of relief works nor an attempt was made by the State Government at the advent of the famine. In this fertile land, vegetables that could be quickly grown to meet the emergency, were not even thought of by the State Government.* The people became helpless merely by the failure of one harvest.

Thirdly, the old system under which no one was allowed to cut or carry his crops without official permission, was abolished and every cultivator now could keep his sheaves dry in his own house.

Lastly, the State Government felt the need and importance of roads and soon undertook the construction of cart road in order to facilitate the import during the time of urgency.

Besides, the house to house search was considered as a fatal mistake on the part of the government and was given up. It was considered the main cause of scarcity, deepening into famine. And the policy of not leaving anything surplus with the villagers was also abandoned.[66] Taxes on trades and occupations were also remitted.[67] By 1880, when the crop out-put was satisfactory, the confidence of the people as well as of the State Government was restored. The signs of the great famine started fading away.

The famine of 1877-79 was an All-India catastrophe and it brought into existence the First Indian Famine Commission which was followed by several others. The MacDonnel Commission of 1901 perfected the recommendations of the previous commissions and since then the Government of India and the native states (as existed at that time) have with them a tried scheme to handle similar contingencies.

Scarcity of 1892-93

The years from 1880 to 1891 were one of relative plenty. Agricultural output during this period was good on account of timely and satisfactory rainfall. As a result, no part of the

* After the calamity was over, the State Government decided that in future relief works should be started immediately without making the poor to wait for death listlessly.

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State suffered from food scarcity. It was only in 1892 that the food scarcity was again felt.

The scarcity of 1892-93 was the result of several causes, aggravated by natural calamities like fire and cholera. The two main causes of scarcity were: (i) the sudden decrease in the amount of revenue collected in kind during the preceding winter, and (ii) the abnormally scanty snowfall on the mountains surrounding Kashmir.[68]

Scarcity in Kashmir

Kashmir proper comprised fifteen tehsils of which seven had been assessed under the new land settlement while others remained unassessed till then. According to the new land settlement, the tehsils which had been assessed were to pay revenue in cash, and not in kind, and hence there was a great fall in the total collection of Shali. It was 200000 kharwars in 1891 and 88,000 kharwars in 1892.[69]

Secondly, snowfall during the previous years was scanty and as a result, the ensuing kharif crop was expected to be poor. Therefore, the demand in the unassessed tehsils was also lowered and the stock in the State granaries further fell.

Besides, there were certain subsidiary causes, such as:-

(ii) the great fire in Srinagar;
(ii) out-break of cholera; and
(iii) the inefficient administration of S. Roop Singh, the then Governor of Kashmir.

In May 1892, a great fire[70] broke out in Srinagar in which were burnt many private stores containing considerable amount of shali. The immediate affect of this fire was that dealers in grain tried to hold back their stocks.

Cholera

The out-break of cholera in the valley, during the summer of 1892, made the villagers ideal and mute, not daring or caring to carry on their daily work. The normal trade in grain, which went on during the months of May and June was totally stopped[71] and no villager unless seized for begar would go near the city where the cholera was raging mercilessly.

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Administration

Sardar Rup Singh, the then governor of Kashmir, had very little influence over his subordinates, who exploited the situation to the maximum. The state of affairs during the incumbency of S. Rup Singh was extremely unsatisfactory. The books showed a nominal reserve of 6 lakh kharwars of grain whereas the granaries were practically empty and their emptiness no longer remained a secret.[72] The revenue staff was quite corrupt. All these factors together aggravated the situation which otherwise could have been staved off.

In the winter of 1891-92 the Mujwaza was neglected by the Governor and Shali[73] brought to the city was 50,000 to 60,000 kharwars only. The snowfall was unusually small and people apprehended that there would be a very poor crop of Shali in 1892 and knowing that S. Rup Singh, the Governor of Kashmir had not made any effort to collect the amount of revenue in kind, many businessmen made large purchase of grain in the hope that the prices would rise. By the spring of 1892, the officiating Hakim-i-Ala had collected 70,000 kharwars but this was soon consumed and by June, the grain supply of the city became critical.[74]

The emptiness of the stores was exposed by the heavy demand of the Gilgit Garrison. When it came to the notice of Golonel Prideaux, the Resident in Kashmir, he at once invited the attention of the Durbar. Then Maharaja felt the necessity of deputing one of the members of the State Council with full powers to organise and carry out the necessary measures of relief.

To control the situation, the State Government deputed Rai Bahadur Pt. Suraj Kaul, C.I.E., the Revenue member of the State Council, in June, 1892. Sardar Rup Singh was summoned at Jammu and was asked to tender resignation. In his place Naib Hakim-i-Ala Mohammed Afzal Khan was appointed officiating Governor. Sh. Mohammed Afzal Khan on assuming charge sent for checking the octroi duty records. On checking these records, it was found that 2,50,000 kharwars of shali had been brought into the city, but only 30,000 kharwars were there in the state granaries.[75]

The first step taken by Suraj Kaul was to restore the con-

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fidence of the people in the city and, to achieve this, he, on the 23th June, 1892 made proper arrangements for the distribution of Shali from six depots of the city. On 24 June, he summoned all grain dealers to the Shergarhi palace and persuaded them to open their shops. This helped the prices to fall considerably.[76]

A munshi and two weighing men were deployed at every point. The grain was to be distributed at the rate of Rs. two per kharwar. A few days after this arrangement, the price of rice fell from 13 seers to 20 seers a rupee, and of flour from 10 seers to 14 seers.[77] Between 24th June and 11th July, 1197, 10 persons received 14964 kharwars of Shali and maize.[78]

Then a thorough investigation into the requirements of the city was made, which enabled the revenue member to reduce the quantity of Shali collections from seven lakhs in 1891 to three lakh kharwars and of wheat from 50,000 to 10,000 kharwars only.[79]

In this connection, in a meeting of the State Council held on 27th June, 1893, it was decided that the State should keep in store the following amount of grains considered sufficient for annual requirements of the city and the state.[80]

Description of requirement	Total qty. required	Shali	Wheat	Barley	Makki
1. Poor classes of city	3,00,000	2,50,000	25,000	15,000	10,000
2. Jail	1500	1500	—	—	—
3. State stables etc.	21,000	18,000	—	3,000	—
4. State expenses	13,000	6,000	3000	4000	—
5. Advances for seed	10,000	5,000	—	—	5,000
6. Dharmarth	15,000	5,000	—	5,000	55,000
Total	3,61,000	2,85,000	28,000	27,000	25,000

It was also decided that a reserve of two lakh kharwars be replaced by new grain every year. Besides, the export of Shali from Kashmir was also prohibited. The octroi duty for entry into Srinagar city was abolished to encourage the import of grains.

Scarcity of 1892-93 was not the result of fall in productivity, but of insufficient import of food-grains into the city and its improper distribution.

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Jammu Province

In the Jammu Province, the first notable period of distress was the year 1892. The rainfall in that year was low, especially in the tehsils Kotli and Naushera. These two tehsils suffered from drought and the crops failed. To the acute scarcity of food-grains was added the distress caused by cholera, which broke out in the epidemic form. This created a sort of panic which compelled many inhabitants to migrate to Punch and the adjoining territory.[81]

When it came to the notice of the State Government, certain remedial measures were taken. Necessary taccavi advances were offered to the cultivators for the purchase of seed and cattle.[82] To the good fortune of the cultivators, rainfall was satisfactory in the following year, which gave them a new hope. The cultivators who had migrated, also started returning to their homes. The harvest was good and the situation was relieved to a great extent.[83] This scarcity was not a serious one. There was no loss of life due to starvation.

Frontier Districts

As far as the frontier districts were concerned, there was no scarcity of foodgrains, except in Skardu tehsils, which was brought to the notice of State Council at the request of the Revenue Member on 7th June, 1893. At the request of the Revenue Member, the Vice President of the State Council wrote to the British Resident in Kashmir asking him to inform at Gilgit to discontinue the supply of food-grains from Skardu to Gilgit for the troops.[84]

That the scarcity in Skardu did not last long becomes evident from a letter addressed to the Resident in Kashmir by the Vice President of the State Council stating that, "scarcity of foodstuffs has disappeared from Skardu[85] and hence the supply could be resumed. The position was cleared by the Tehsildar of Skardu, who wired to the Revenue Member that he could spare 12000 maunds of grains, viz., barley and Giram.[86]

The Scarcity 1896-97

The years that followed were good as far as agriculture was concerned. Neither the state as a whole nor any part thereof witnessed any scarcity till 1897. It was only in that year that scarcity was again felt in Jammu and Jasrota districts.

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The hilly tracts of Jammu had no irrigation facilities and hence depended entirely upon rains. So when rainfall in 1896 was poor, the kharif harvest failed in the hilly tracts of Jasrota district. So far as the Wazarat khas of Jammu was concerned, nearly 32% of the total cultivated area was affected.[87] The Manawar and Mirpur tehsils of the Bhimber district also suffered.[88] The famine statement of Wazarat Khas Jammu of that year shows that out of a total population of 249585 some 54943 were affected by scarcity[89] and out of these only 71 were on famine relief works on the last day of November 1896. Further no gratuitous relief was given in the Jammu khas district nor apparently in the Jasrota district.[90]

The liberal measures such as the opening of relief works, taccavi advances and the suspension of a portion of the revenue in certain villages were considered necessary. The suspension of revenue had an excellent effect on agriculture class.

Prices

Owing to the drought and the rather unusual weather, in general, the prices of foodgrains in Jammu and the adjoining regions rose high. To counteract the rise in prices the State Government decided to institute some relief works. Besides, temporary famine allowance was also sanctioned in favour of employees, other than army personnel, getting Rs. 10 or less p. m.[91]

Lt. Col. Raja Sir Amar Singh K. C. B. Commander-in-Chief of Jammu and Kashmir Army, too submitted to the State Council a request for the sanction of famine allowance to army personnel stationed at Jammu. The State Council in its meeting held at Jammu on Saturday, the 27th of February, 1897, sanctioned an extra allowance of Rs. 2/- per head for the army personnel whose monthly salary was Rs. 10 or less.[92] The extra allowance of Rs. 2/- p. m. in favour of the army personnel was sanctioned at the first instance and was reduced to Rs. 1-8-0 p. m. when the wheat was selling at less than 10 seers[93] a rupee, and was further reduced to Rs. 1/- p. m. when the price was not dearer than 10 seers. Besides, foodgrains, the scarcity of fodder was also felt in the Jammu Province. In order to meet this problem the State Government threw open a few of the state forests

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preserves for free grazing of cattle.[94] This timely and liberal action on the part of the government saved the cultivators from further worry. The importance of cattle to the cultivators can hardly be overestimated.

Dewan Amar Nath, the Governor of Jammu, after touring the affected areas called on the Resident at Sialkot on 4th April, 1897. He apprised the Resident of the distress that had been felt in about four hundred villages[95] and also discussed with him the necessity of starting relief work in the kandi areas. The relief work began in the month of December, 1896 but was discontinued on 2nd February, 1897, since the scarcity was then considered to be slight. The distress, however, did not last long. Rains came in time and prospects of the rabi crop appeared promising.[96]

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CHAPER IV

FAMINES
(*1899-1925*)

Scarcity of 1899

The harvests in Jammu Province since 1896 were mostly below the average and as a result scarcity in some form prevailed throughout this period. This year also the kharif harvest failed and prospects for the ensuing rabi harvest were also not favourable owing to insufficient rainfall.[1]

The areas most affected were the kandi tracts where cultivation depended solely on rainfall. In these areas kharif harvest almost failed and the rabi crops could be sowed only in 25% of the whole area, which too failed for want of rain. The total number of villages affected by the failure of kharif during the year is shown in the following table:

District	Total No. of villages	No. of villages affected
Jammu	1223	281
Jasrota	590	265
Bhimber	1015	84
Udhampur	974	1

The following tehsils suffered most:

(1) *Samba*: The Samba tehsil of Jammu district suffered most because of its proportionately high kandi tracts. The area was

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devoid of artificial irrigation and depended solely on rains. Secondly, five successive bad harvests had caused a total exhaustion of private grain stores. Thirdly, flocks of Nilgai, a wild animal whose killing had been prohibited by the Durbar, caused much damage to the crops. During the kharif harvest of 1899 an area of 4846 Ghumaos failed out of 7412 Ghumaos of the total cultivated area.[2]

(2) *Jammu Khas:* In this tehsil some area was kandi while others were irrigated. The total area cultivated for the kharif crops was 9870 Ghumaos, out of which in nearly 3300 Ghumaos the crop failed. This tehsil also suffered extensively.

(3) *Akhnoor tehsil:* In this tehsil two circles, 'kandi' and 'pahari' suffered out of four. The affected area in this tehsil was 2125 Ghumaos out of 89717 acres cultivated for the kharif harvest.

(4) *Ranbir Singh Pura:* Practically the whole of this tehsil was affected by drought. The total area of land under kharif cultivation was 7027 Ghumaos out of which in 2917 Ghumaos, the crop failed. The area irrigated by means of wells was, however, safe.

(5) *Kathua tehsil:* In this tehsil the total area cultivated for kharif was 27339 Ghumaos out of which in 8270 Ghumaos, the crop failed.

(6) *Manwar tehsil:* This tehsil also suffered to a great extent.

(7) *Mirpur tehsil:* In this tehsil area covered by the kharif crop suffered severely while the rest of the tehsil fared comparatively better.[3] The area enjoying some irrigation facilities suffered less as far as kharif harvest was concerned. The ensuing rabi crop was also sown in considerably large areas.

On the whole, the food situation in Jammu Province was not so bad as to be termed a famine. There was no loss of life due to starvation. People migrated to favoured regions not so much for food shortage but for want of fodder.

Prices

During this year the prices nearly touched the highest point reached in the year 1897-98. Wheat was selling at 10 seers and maize at 12 seers a rupee in general. The market prices of unhusked rice and maize per maund in Jammu and Srinagar cities respectively were as follows:[4]

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In Jammu	*In Srinagar*
Shali Rs. 3/-	0/11/0
Maize Rs. 3/4- to Rs. 3/6/-	— -/10/6/-

This comparative statement shows the extent of severity in Jammu Province. In Srinagar the food scarcity was not at all felt. The statement regarding the severity of the situation in Jammu is further corroborated by the fact that the 'Mians' (Muslim Rajput Community), who considered manual labour below their dignity, actually applied for ordinary labour work on relief measures started by the government.[5]

Relief Measures

The state government started certain test works where the needy agriculturists were engaged. The test works included the repairs of the kacha tanks, to store water for men and cattle, and repair of the Jammu Sialkot and Chauki chora roads. The courts were also directed to suspend execution of decress against agriculturists and Revenue officers also were instructed to be generous in collecting revenue from agriculturists. Taccavi advances for sinking wells and purchasing seed and cattle were also advanced to the farmers.

Besides, the State government opened nearly seventy rakhs for the free grazing of cattle, because the fodder scarcity was the chief complaint[6] of the agriculturists. A free supply of wood from the state rakhs was also authorised for agricultural purposes (vide Vice President's letter No: 7453 dt. 18th January, 1900).

The state government also felt the need for employing one more Veterinary Assistant in Jammu Province to combat the cattle diseases which too were raging in full swing.[7]

There was over a lakh and a quarter kharwar (two and a half lakh maunds) of Shali (revenue grain) in the Srinagar State Godowns.[8] This grain could have been brought to Jammu and sold at a considerable profit. This would have also lowered the prices at Jammu and the government would have been benefited. But according to the existing rules export of Shali from

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the valley was prohibited. The state government, however, allowed the people of Jammu Province to import, free of customs duties food-grains and fodder for their personel use from the Panjab. The following table shows the amount spent on relief measures at different places in Jammu province.[9]

Tehsil	*Taccavi*		*Test Works*	
	Proposed	Sanctioned	Proposed	Sanctioned
Kathua	3000	3000	1200	1200
Basohli	3000	3000	7000	7000
Jasmergarh	4000	4000	1800	1800
Bhimber	1000	1000	—	—
Kotli	—	—	6125	6125
Jammu	5000	5000	—	—
Samba	15000	15000	15000	15000
Akhnoor	5000	5000	—	—
R.S. Pura	5000	5000	5000	2000 for tanks
Riasi	—	—	2000	2000 for roads
Udhampur	2000	—	5000	2000
Ramnagar	5000	—	500	—

Scarcity of 1903

Jammu Province

The twentieth century opened with very gloomy prospects for the Jammu region. The rabi crops of 1900-01 suffered throughout the province, especially in the kandi tracts for want of sufficient rains. Cattle disease and plague also adversely affected some regions. The state government was, therefore, again obliged to come to the rescue of the suffering people and started relief measures as before.[10] But drought and disease in Jammu Province continued for two years.[11] The failure of kharif harvest in 1902 caused a calamity in the following year. The rabi crops in 1903 were also below average. The failure of rabi crops in the 'Ek Fasli'* tracts had also some effect on the whole Province.

*Ek Fasli—The land that produces one crop in a year.

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In some regions the failure of rabi crops was due to poor rainfall, while in others it was due to its excess.[12] The deficiency in food-grains caused high rise is prices. To help the people to cope with the rising prices the state government started many relief test works. The taccavi advances worth Rs 11000[13] were advanced to the agriculturists of Kathua, Basohli, Jasmergarh and Bhimber tehsils.

The State Council at its meeting held on 22nd July, 1903 resolved unanimously that the state employees drawing Rs 6/- or less per month be granted a famine allowance at the rate of Rs. 1/- per month, those drawing Rs 10/- or less a month were to receive Rs 1-8-0 as long as rice was not cheaper than 10 seers and maize 20 seers a rupee.[14]

The maidani chaklas* in all tracts in the Jammu Province also suffered alike with the exception of R. S. Pura tehsil. The need to start any test work there, was not felt, as the Kanbir canal was already under construction since 1903.[15] This canal was constructed down to the Tawi crossing near the Jammu city in 1906,[16] but its completion took place in 1911 at a total cost of Rs 35,36,714.[17] It flowed 39 miles in the main channel and 212 miles in the distributaries in all 251 miles.

The general condition in the subsequent years improved despite the fact that heavy and untimely rainfall in the higher regions of Kishtwar tehsil in 1904-05 caused a total failure on the Kharif crop. Consequently a large number of people migrated to the adjoining valley of Kashmir.[18]

Kashmir Province

In Kashmir the general condition started deteriorating with the advent of the twentieth Century. In 1901-02, snowfall in Kashmir was very meagre and cattle diseases prevailed throughout the Province; rinderpest alone caused 12944 deaths.[19] In the following year the kharif harvest suffered for want of timely rains and also due to insufficient snowfall in the preceding year.

Prices

Consequently, the market rate of Shali (unhusked rice) which was Rs 1/- per kharwar[20] in 1900 at Srinagar rose to

*Maidani chacklas—are the areas where level of the soil is even and smooth and is considered best for agricultural operations.

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Rs 2/8 in 1902[21], and about Rs 4/8 in May, 1903.[22] The climax however, reached in July 1903 when there occurred a great flood which caused incalculable damage to the rabi harvest which was then in the early stage of growth. The details of this flood have been given in Chapter on the "Floods".

General scarcity of foodgrains was the natural result and, therefore, prices rose considerably high throughout the Kashmir valley.[23] The situation was further aggravated when an element of artificial scarcity was introduced due to hoarding of grain by traders. It gave a further push to the rise in prices. However, it should be borne in mind that the so-called famine was not due to scarcity of the grains. The fact was that the people of Kashmir had been accustomed to getting Shali from the State stores at a fixed price of Rs 1/4 per kharwar[24] irrespective of its marked rate from a long past. When this custom being considered an unreasonably harsh on Zamindars was stopped, a man who could formerly support himself and his four or five dependents within an earning of four or five annas a day, was unable to do so by buying grains privately from the bazar at high rates. This was the real reason that made the people to raise a hue and cry. This became evident at the time when some famine test works were started and the number of those who turned up was very meagre.

The poor classes experienced great hardship. Those who were accustomed to live on Shali took a maize and those already living on maize began to consume it in reduced quantity.[25]

In order to relieve thes ituation, the state government started relief measures on an extensive scale and in a variety of forms, such as, suspension and remission of the land revenue, grant of advances for seed and cattle, free grants of money for building purposes etc. A handsome amount was also subscribed through private charity both inside and outside the state to help the suffering people.[26]

The effects of the famine or famine-like conditions in Kashmir are felt mainly in winter. For in the summer fruits and vegetable food is more or less available. No relief test work is ordinarily feasible in Kashmir in the winter and, therefore, the able-bodied persons generally go out of Kashmir during the winter months for work and come back when the

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winter is over and the time of sowing starts.[27] It is because the state is bound to give gratuitous relief to the Kashmiris in the winter season.[28]

Excessive rains in Kashmir usually mean good rainfall in the northern districts of the Panjab and in the highlands of the Kashmir Province. Therefore, when the kharif crops in Kashmir fail on account of excessive rains, the northern districts of the Panjab and the high lands in Kashmir Province usually yield a bumper rabi crop which compensates the loss and hence danger of scarcity is averted.

Distress in Jammu-1908

Between the years 1903 and 1907 the Jammu Province faced no scarcity of food as such. But the year 1907-08 again brought distress to the people of Mirpur, Jammu and Jasrota districts especially because the kharif crop of preceding year was below normal and the sowing of the rabi crop was also hampered by incessant rains. Whatever little was sown with high priced seed did not bear fruit. Therefore, the failure of two consecutive harvests aggravated the situation. Whenever the crop

STATEMENT-A[30]

Tehsil	Area affected in in Ghumaos	Rabi Harvest Area sown	Kharaba	Remarks
Jammu	123087	80070	51748	
R.S. Pura	122787	63924	39260	
Samba	1006159	54729	43729	
Akhnoor	134307	73608	41757	
Mirpur	311817	15077	7277	
Bhimber	99567	45159	26107	
Kotli	111387	47148	34863	
Rajouri	57232	20425	16929	
Riasi	60679	28318	19330	
Kathua	22121	10361	8699	
Jasmergarh	38634	15829	12579	
Basohli	44560	12843	5057	
Ramnagar	27311	7324	4629	
Udhampur	—	—	—	

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was good the farmers disposed of their stock for immediate profit.

The extent of area returned as cropped and kharaba of rabi crop is given in the statement on previous page.

Prices

Prices rose very high. Corn was selling at 7 seers[29] per rupee in the Muffasil. The classes most affected were the agriculturists in general and Sanmian, Thakkars and Brahmins, who thought it below dignity to earn their living through physical work. The intensity of distress was severe and it was expected that its effects would last till next October or November, and then if rain fell well in time the condition would improve.

The State government took some precautionary steps, such as grants or taccavi advances to agriculturists, opening of rakhs for free grazing of cattle, remission of customs duty on the import of grain and suspension of revenue wherever necessary.[31] Taccavi advances worth Rs 41,000 were given and Rs. 26125 were spent on test works.[32]

Besides, the State government started certain relief works for the poor. The revenue officials were also instructed not to be strict in the collection of unsuspended revenue. The state government also approached Sahukars* and asked them to help[33] their assamies. The Sahukars in turn were assured of official help.

Kashmir Province and the Frontier districts witnessed a fair and timely rainfall and hence the harvest was satisfactory. On the other hand, Jammu Province again experienced a widespread scarcity during 1911-12 and the collection of land revenue[34] was suspended.

Then, from 1911-12 to 1915 harvests were quite satisfactory. Rain fell in time and there was no complaint about scarcity of food-grains or fodder from any part of the state except Skardu tehsil in 1913 when owing to untimely and heavy snowfall and rains rabi crops, fruit trees, and livestock suffered seriously. Many trees were uprooted and the crops were burried under the snow.[35]

The people of Jammu Province once again had to face distress in 1915-16 and the collection of land revenue had to be

*Sahukars = Professional moeny-lenders.

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suspended by the state government on an extensive scale. At this time a serious epidemic of plague broke out which further aggravated the situation. In the Kandi tract of Kishtwar tehsil, the failure of crops caused substantial distress to the people and the state government had to send supplies from Kashmir to relieve the situation.[36]

Thereafter, the state of agriculture in Jammu Province improved and, on the whole, it enjoyed three normal years in succession.[37] However, in 1917-18 the prices rose very high. This rise in prices was due to a bad harvest coupled with the outcome of an economic upheaval that had taken place throughout the world owing to the World War.[38] Prices in Jammu Province were so high that wheat, the staple food of the people of this region, was selling at 7 seers a rupee, while 5 to 5½ seers of rice could be brought for a rupee.[39]

To control these soaring prices, the state government announced a temporary suspension of octroi duty, which encouraged imports and helped in restoring normalcy. The prices, however, came down within a few months. The state government fixed the prices in Jammu town as follows:[40]

1. Wheat Ist class 8 seers per rupee.
2. Wheat 2nd class 9 seers for a rupee.
3. Goji (Mixed with Jou) 14 seers per rupee.
4. Jou 14 seers per rupee.
5. Maize 14 seers per rupee.
6. Barley 10 seers per rupee.
7. Rice 9 seers per rupee.

Besides, nature came to their rescue in the form of showers at the time of sowing the rabi crops.[41] By the end of 1918 the situation was relieved to a great extent on account of a good rabi harvest, but the prices did not come down to the extent expected.

Kashmir Province

In Kashmir Province, too, prices rose very high due to the economic upheaval caused by the world war and the poor harvest in the year 1918, though the export of foodgrains from the valley was already prohibited. Rice was very dear and was selling at the rate of 5 to 5½ seers a rupee.[42] To bring down

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prices and to encourage imports, the State Government suspended octroi duty. In the year 1919 fodder scarcity was felt at Muzaffarabad[43] district on account of the failure of the crops in May and June.

The situation, however, came under control by the end of 1919, when the kharif harvest turned out to be a bumper one. The grain dealers started bringing their stocks freely to the market and there was no complaint of scarcity of foodstuffs. Prices came down considerably in Srinagar, whereas they remained a bit high in the Muffasil. The situation was generally satisfactory.

Frontier Districts

Though some damage to the crops occurred in one part or the other at different times, yet it was in 1914-15 that a real scarcity was witnessed for the first time in this region. The unfovourable weather in Gilgit and heavy floods in Ladakh caused by the untimely rain and snow in the month of April damaged the crops to a considerable extent.[44] The scarcity thus caused by the failure of one harvest was not an acute one. The only help that the state government could give was the suspension of the collection of land revenue in the villages most affected.[45]

In the following years, however, agricultural conditions[46] improved, despite a little setback which occurred due to scanty rainfall in the Ladakh area in 1917-18.[47] There was a rise in the prices. To meet this situation,[48] the state government made arrangements to export 700 maunds of maize and 300 maunds of rice from the Kashmir valley.[49]

Scarcity of 1921-22 (Mirpur Famine)

The years 1921-22 were again marked by bad harvests. Besides the districts of Kathua and Udhampur, Mirpur also suffered badly.

Scarcity in the districts of Mirpur, which caused a famine-like conditions was the result of failure of rains. Bad harvests and the incompetence of revenue officials entrusted with the duty of giving a relief to the needy made things worse. The area most affected was the Kotli[50] tehsil of Mirpur. There was a real famine in this tehsil.

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The famine in the Mirpur district was of three types, viz., fodder famine, foodgrains famine and water famine. There was an acute shortage of water supply in the Kotli tehsil.[51] The Maharaja who was quite aware of the facts advanced aid to the needy which, of course, was not distributed in time by the revenue officials. Whatever little aid was received by the people was virtually left over to an enormous waste.[52] This created a panic among the people. Able-bodied persons left their families and moved to happier places to earn livelihood. If the revenue officials had performed their duty well, things would have been different.

Besides food scarcity, terrible fodder shortage was also felt in the Jabail area of Kotli tehsil, where animals started dying in hundreds.[53] Cows were the worst sufferers, because they could not be taken out of the state under the existing customs. The animals were set at large to wander about. Those who survived were stated to have lived on roots.[54]

Prices

Prices rose high. Maize was selling at Rs. 14/- per maund at Mirpur and freight charges from Mirpur to Kotli were 10 to 12 annas per maund,[55] so the actual selling price at Kotli ignoring any element of profit was beyond the reach of an average man. The bhoosa (fodder) was so scarce that it had to be imported from the Panjab at a very high price.

The pitiable condition of the people compelled the Durbar to start certain relief measures immediately. The relief measures were as follows: [56]

(1) Postponement of coercive measures for recovering kharif instalments;
(2) Exemption from the payment of customs duty on foodgrains and bhoosa imported into the State;
(3) Exemption of double grazing tax for animals migrating from one tehsil to another;
(4) Free grazing of cattle in the Rakhs and the Forests; and
(5) Taccavi advances worth Rs.500/- for the sufferers.

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Besides these concessions, the State Government started relief measures. A very small number of People attended the relief work, because most of them had migrated. Moreover, the climate of Mirpur was not suitable for the Kotli people.[57] The State Government advanced Rs. 1,50,000 for the purchase of grains which were to be sold to the affected people at reduced rates.

Apart from the State Government, some other institutions like the Sanatan Dharma Sabha, also came to the rescue of the sufferers. Maharani gave about Rs. 15,000 for running free kitchens for those who were not able to earn their livelihood. The Dharmarth Department and Messrs Spedding and* Co. contributed Rs. 5000 each for the aid of victims. Every possible effort was made to alleviate the situation. About 1000 maunds of maize were imported from the Kashmir valley and distributed among the needy.[58] A Relief Committee at the district level and Sub-Committees in different tehsils were formed to coordinate relief work.

The rain in June, 1921 brought some relief. The ensuing harvests were good, but it was not till 1922-23[59] when crops were above the average on account of timely and sufficient rains that the people could recover from the ill-effects of this famine. Thereafter the conditions improved and no scarcity was experienced till the end of the year 1925-26.[60]

Kashmir Province

After the great distress of 1903-04, Kashmir was again free from scarcity for a number of years. But in 1915-16, rainfall was much below the average, which resulted in conditions of acute scarcity in some parts of Kashmir. This was a bad year for Jammu Province also. In Srinagar, prices of rice steadily rose from Rs. 3/- per kharwar in 1916 to Rs. 18/- in 1921[61] and rice was procured with difficulty. People had to go through "one long continuous struggle for food".[62] Fortunately, however, there were no deaths due to starvations.[63]

After a threadbare discussion in the official circles it was concluded that the abnormal rise in the prices was the result of the short produce of shali, the undue hoarding by the traders,

*British Company entrusted with the construction of Gilgit road.

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and rise in the prices throughout the world consequent upon the first world war were the main causes.[64]

For quite some time the State Government supplied food at cheap rates to thousands of poor people. It also took some administrative steps to tackle this unprecedented crisis,[65] but no success was achieved till it was decided to revert to the old Mujwaza system. i.e. the collection of part of land revenue in kind. The shali thus procured began to be distributed to the residents of Srinagar, in a fixed quantity, at a subsidized rate of Rs. 5/- per kharwar.[66] From 1922-23 onwards till the end of our period of study, the out-turn of crops also improved and the market prices registered a general fall.[67]

The district of Muzaffarabad also witnessed food and fodder scarcity in 1921-22.[68] To remedy the situation there, exports were allowed from the Kashmir valley and the import of food-grains and bhoosa was also encouraged by withdrawing customs duty on imports from British India. No special test work was thought necessary as there was sufficient scope for the employment of local labour in the 'Deodar' and 'Pine' forests and on the Jhelum valley road.[69]

Agriculture

Agriculture was the predominant sector of economy of the State. As we have seen, 76.6% of the people of the State in 1901 and 80.2% in 1921 were engaged or dependent upon agriculture.[70] Even the people engaged in other occupations had in agriculture a supplementary source of income.

General Conditions

In the Jammu Province, only a fringe of land along the border of the Panjab is plain and alluvial; the rest is all hilly, gradually rising towards the Himalayas. In the plain all the crops which grew in Panjab werè produced such as maize, barley and wheat, etc. In the higher altitudes saffron, buckwheat and mountain-barley were grown.[71] In the hot moist tracts irrigated by Ravi and Ujh rivers in the Kathua district (then in Jasrota distt.), the peasantry was numerically weak and, therefore, depended on external help at the time of sowing and harvesting. This help was rendered by the people from the adjoining areas of the

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State as well as from the Panjab.[72] The kandi tract (broad streches of burning sand) that lay in the north of Kathua district was teemed with many khads or channels which became roaring torrents for a few hours after a heavy rainfall.[73] Here in this tract crops depended on timely and well-distributed rainfall.

Cultivation on the slopes of the hills was precarious. Too much rain in this area often caused water-logging, as percolation was obstructed by the rocky bed of the soil. During the unbroken spell of the hot weather, the rocky surface was heated to such an extent that it burnt the roots of the crops which ultimately withered away.[74] On the high hills, condition on the whole was better on account of temperate climate and usually heavy rainfall.

Kashmir Province

Conditions of agriculture in Kashmir was relatively good owing to the abundance of water. The soil was mainly fertile and alluvial.[75] Apart from this, there were also some extensive elevated plateaus of alluvial or laccustrine material. They were locally called Karewas. The Karewa soil had no inherent defect, but it did not yield a good harvest unless it was properly watered. Rice, the staple food of Kashmir was grown wherever irrigation facilities were available. In the non-irrigated areas the crops sown were wheat, barley, maize etc.

Ladakh, being a rocky and mountainous area, lagged behind as far as agriculture was concerned. Wherever there was some levelled ground, irrigation was carried on. The crops sown in this area were beardless barley or a giram.[76]

In Gilgit, there were only narrow strips of cultivable land, the rest being barren and mountainous. Irrigation in Gilgit, like Ladakh, was carried on by means of small channels or kuhls, as there was but little rainfall throughout the year. All agricultural plots were irrigated and a total failure of crops owing to the scarcity of water was an impossibility there.[77]

Agricultural Operations

Owing to the variations in the climate, soil and nature of irrigation, agricultural operations and the system of cultivation naturally varied from region to region.

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Jammu Province

In Jammu Province, there were usually two crops in a year, namely, the winter and the summer crops. i.e. rabi and kharif, respectively. The rabi crops consisted mainly of wheat and barley; while main kharif crops were rice, maize and millet. These crops were sown according to the location and nature of soil. The rotation of crops was often practised, e.g. maize was followed by wheat, barley, masar or by some variety of fodder.[78] Rice was grown on the same field year after year.

Kashmir Province

The land in Kashmir generally yielded one crop a year and was, therefore, known as *Ekfasli*.* Some highly cultivated garden lands in the neighbourhood of Srinagar and some other towns yielded a number of crops in a year. The nurseries where seedlings were sown always gave a crop of turnip in the autumn season.[79]

Frontier Districts

In Ladakh, like Kashmir, no customary rotation of crops was followed. However, wheat was not grown on the same land for more than three consecutive years, as it was believed to weaken the soil. In some villages where the land was dofasli,** i.e. it gave two crops a year preference was given to Giram which was followed by trumba, china or Kangini.[80]

In Gilgit the crops thrived all under the rotation system. The 'Dofasli' lands producing maize or other valuable kharif crops were left fallow at times during the season. Sometimes a kharif crop was replaced by an inferior crop which would not exhaust the vitality of the soil. Sometimes ekfasli lands were also left fallow for rest.[81]

The cultivators of the state were fully conscious of the utility of improved methods of ploughing and manuring to augment agricultural output. The cultivators of Jammu and Kashmir recognized the principle, viz., the greater the number of ploughing operations the greater was the yield of the crop. Besides, good ploughing, the Kashmiri cultivators appreciated

*Please see p. 75.

**The land that produces two crops a year.

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the importance of manuring their fields, As a rule they reserved for agriculture all the dung of sheep, cattle and horses dropped in winter when animals were confined within their houses.[82] The turf clods were, however, considered to be a far more effectual renovator of rice fields than the farm-yard manure. Green manuring was also practised. Thus the weeds which grew rapidly were ploughed in when the lands were prepared for spring crops of wheat and barley. According to W. R. Lawerence, however, this green manuring did more harm than good, for it opened the pores of the soil, which was already very loose.[83]

In Jammu Province, the decomposed refuses called 'Ruri' generally found near the villages were also used as a manure.[84] In the Frontier Districts of Ladakh and Gilgit, the manuring was most necessary for better output as the soil of that region was sandy. The cultivators of the Frontier Districts collected leaves of trees, the rotten straw, and the wild plants in the beginning of the spring season and later mixed with the cattle dung and the substance thus obtained was used as a manure.[85] They also frequently renovated the surface soil by top dressings of the earth brought from the hill side.[86]

Agricultural Problems

The position of agriculture of the State showed a downward tendency during the first two decades of the 20th century. The land revenue collections which amounted to 52% in 1900-01[87] came down to 22% in 1920-21.[88] This was because of the failure to employ a large working force efficiently. The factors that hampered the growth of this important sector of economy were:

(i) *Land Utilization*: In the State of Jammu and Kashmir, the total cultivable area was very small. It was 5.18% in 1911 and 6.8% in 1921. Any further extension in this area was very difficult because of the mountainous nature of the region. Even this small area could not be properly and fully utilized. In Kashmir, for instance, the land was mostly ekfasli. There could

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be no harvest in the winter months owing to heavy snowfall and the severity of the weather. So the percentage of this double cropped area in the State was very limited. It was 16.6% in 1911 and 9.3% in 1921.[89] of the total cultivable area.

(ii) *Cropping pattern:* The cropping pattern was heavily dominated by the food crops. It was only the rice, wheat and maize that covered 62% in 1911 and 62.5% in 1921 and of the total cultivable area.[90] Thus we see that the bias in favour of cheap food crops was very high and as a result the income of the majority of cultivators was bound to be low.

(iii) *Damage to Crops:* Crops in many parts of the State were damaged by a number of external factors.

In the Jammu Province, crops were damaged by insects, birds, wild beasts, hailstorms and heavy winds as well as some kind of diseases. The common disease which damaged the rice crop was named as Rai. It was caused particularly by extensive heat and sultry weather.[91]

In Kashmir Province, crops were damaged by pests, wild animals, cold winds, untimely rainfall and snow and also by certain diseases. The disease which damaged rice was called Rai and the one that caused damage to the wheat was called Sarmai.

Efforts of the Government to Improve Cultivation

The practice of lending money for the purchase of seed and bullocks, suspension of revenue collection whenever necessary and of advancing taccavi loans to the agriculturists were the means calculated to improve agricultural sector. But such practices became vague by the end of nineteenth century.[92] It was only in 1902 that a regular department of agriculture in Kashmir was established to promote the interests of the farmers by introducing better varieties of seed, scientific implements, and better manures.[93]

In 1906, the Pratap Model Farm was established near the Shalimar garden by the Agriculture Department to popularise the use of better seeds and agricultural appliances so as to effect a better mode of cultivation in Kashmir.[94] Several

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varieties of seeds were imported to carry out experiments at Pratap Model Farm. And after the experiments the results were recommended to the cultivators for adoption.[95]

In 1919-20, the Agricultural Department Board was constituted for effecting further improvement in the produce of staple.[96] These measures resulted in the induction of not only some new staples but also of a number of modern implements. But the number of cultivators, who actually began using these implements, was very small.[97]

During the early period of Dogra rule the Jammu and Kashmir State did not experience any famine or acute food scarcity. Maharaja Gulab Singh, the founder of the State, remained busy, throughout his reign, mainly in settling frontier problems and could not devote time and thought to the problems, which in the last quarter of the 19th century, caused immense sufferings to the people of the State.

The officials during this period were so corrupt and unscrupulous that whenever there was any scarcity, they exploited the situation to the maximum to their own advantage, at the cost of poor people as well as of the State exchequer. The officials could manipulate and conceal information and the State Government could get at the facts when the situation was well beyond redemption. Even relief provided by the State Government in times of scarcity, even when adequate, was not distributed by the officials in a desired manner. For example, an officer, whose position gave him opportunity, stole a large quantity of grain from the public stores. He would not sell the grain in the open market but would negotiate a deal with a friendly Jagirdar having private stocks to be disposed of in the black market. The defalcation was not apparent till the store was virtually empty. And then what could be easier than to argue that the estimate of crop collected in this store was exaggerated, or that the peasants, who meanwhile had probably died of starvation, had stolen or forcibly taken away the grain. To take another instance, an influential official incharge of rice brought to the city of Srinagar had a son, who was Zilladar of Sopur. An order came from the Maharaja that so many kharwars of rice were to be sent from Srinagar to be

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sold as ration to the people of Sopur. The supply was accordingly forwarded to the Zilladar of Sopur, who, after a decent interval, and after depositing the total value of the rice at the rate fixed by the State Government in the Sopur Treasury, returned the rice to his father at Srinagar, who then sold the rice secretly at an exorbitant price. The Treasury was satisfied and gave no sign of the embezzlement, which was disclosed only by the subsequent virtual depopulation of Sopur. This was the general practice of the day. The needy seldom got what they required, whereas the rich and the influential always got what they wanted.

The famines also affected the socio-economic life of the people in many ways. During times of trouble, the people, irrespective of religion, lived and starved together. This intermingling broke the barriers of rigid casteism and even orthodox Hindus came closer to their Muslim neighbours.

Some times, the pathetic condition of the poor roused sympathetic feelings among some who came forward with open hearts and various agencies, particularly the Christian Mission, donated liberally, though often for their parochial ends.

Famines not only affected agriculture but also industries. The industrial workers, who come from the poorer sections of the society suffered equally. Many of them had to leave their home and become wanderers causing a shortfall in industrial output and exports. Many industries were even closed. For example, during the famine of 1877-79 the shawl weavers suffered so heavily that for sometime shawl industry was virtually closed down and it has not so far completely recovered from that setback. During the periods of scarcity, people migrated outside the State in search of livlihood and often later settled there. This gave rise to new Kaskmiri colonies. Those who migrated temporarily often brought back with them new habits and useful knowledge, which made them more productive in future. On the whole these calamities made people more superstitious and fatalistic.

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CHPATER V

EARTHQUAKES

An earthquake is a vibration of the earth's surface due to natural causes and results in rumbling, undulating shaking, rolling and jolting of the earth, sometimes accompanied by fissures or permanent changes of levels.

Earthquakes are the most destructive and terrifying of all the natural phenomena. These are one of the most dreaded scourges and have naturally aroused a sense of fear and curiosity in the human mind. It is estimated that over 1.5 million people have died[1] in earthquakes since 1000 A.D. and according to UNESCO some 60,000 shocks occur every year, most of which are not felt by human beings.

The science of earthquake is called Seismology which has come from the Greek word "Seismos" meaning earthquake and 'Logy' meaning science. The instrument designed to record the vibrations are Seismographs and the records they write rea Seismograms.

The conception of earthquakes demand a scale of reference to measure the relattve intensity of quake waves at different places on the earth's surface as in certain localities earthquakes are frequent and attain great destructive power.

Following is the Richter Scale (after G.F. Richter—an American Seismologist) for measuring the magnitude of earthquakes and their possible effects:

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Table 1 & 2

Scale	Intensity	Description of characteristic effects
I	Instrumental	Datected only by Seismograph.
II	Feeble	Noticed only by sensible people at rest, delicately suspended objects may swing.
III	Slight	Like the vibrations due to a passing lorry felt by people at rest, especially on upper floors. Standing vechicles rock slightly.
IV	Moderate	Felt by people while walking, rocking of loose objects including standing vehicles. Windows displaced, walls crack slightly sometimes.
V	Rather strong	Felt generally, most sleepers are wake and bells ring. Unstable objects move.
VI	Strong	General alarm; wall cracks, plaster falls; Noticed by persons driving a car.
VII	Very strong	Trees swing and all suspended objects swing. Damage by overturning and falling of loose objects. Some chimneys fall.
VIII	Destructive	Car drivers seriously disturbed, masonary fissured, chimneys fall, poorly constructed buildings damaged, sand and mud ejected in small amounts.
IX	Ruinous	Some houses collapse where ground begins to crack and pipes break open.
X	Disastrous	Ground cracks badly, many buildings destroyed; Railway lines bend; landslides on steep slopes water splashed over banks.
XI	Very disastrous	Few buildings remain standing, bridges destroyed, all services (railway pipes and cables) out of action; great landslides and floods, broad fissures in ground.
XII	Catastrophic	Total destruction, objects thrown into air, ground rises and falls in waves, lines of sight and level distorted.

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In physical terms magnitude is determined partly by the duration and number of jerks and tremors, but mainly by its maximum acceleration.

Causes of Earthquakes

The causes of earthquakes are not exactly known since the forces which produce a condition of instability within the earth's crust are not known Following are the probable causes so far known :-

(1) *Slipping along fault planes*[4]

If slipping between two rock surfaces is to be accepted as an immediate cause of the earthquake, it is necessary to assume that we have something like fault plane at a considerable depth. A fault is a failure of two adjacent geological formations to match on account of slipping of the two parts with respect to each other along a plane known as the fault plane. One side may remain fixed while the other moves, or both may move in opposite directions. The second case is probably the more common. For most earthquakes there is little or no motion at the surface and the fault plane along which slipping occurs may be far below the earth. The earthquakes of this type may be generated at a depth of 50 kms.

(2) *Elastic rebound Theory*

Harry feelding Reid proposed the elastic rebound theory which has general acceptance among geologists and Seismologists. According to it, the earth comes under compressive stresses and is pulled apart under tension. Materials of the earth being elastic can withstand a certain amount of stress without deforming permanently but if the stress is continued for a long period of time, or if it is increased in magnitude, the rocks will first take a permanent deformation or strain and eventually rupture tend to return to their original shape because of their elasticity and an elastic rebound occurs. This rebound sets up the seismic waves.

This simply means that there is one outstanding release of energy far in excess of all others and it is this which sends out the waves that travel to great distance resulting in earthquakes.

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(3) *Volcanic Theory*[5]

The earliest non-mythological explanation and one which was long accepted directly associated all earthquakes with volcanic activity.

The theory pictures the earth with a liquid penetration of sea water into the hot interior is an active cause and this explains why so many earthquakes take place close to or under the sea.

Seismologists make a sharp distinction between volcanic and tectonic earthquakes as the latter are ascribed to slipping between rock surfaces, while the former are due either to explosive action (chemical) or to sudden stopping of magma (mechanical).

(4) *Shrinkage of earth's crust*

Another type of explanation still held by some geologists attributes the existence of mountain chains and ocean deeps to shrinkage of the earth's interior and consequent wrinkling of the surface—these changes being sufficient to account for earthquakes.[6]

(5) *Erosion and deposition*

The earth seems so stable that it appears as if nothing could disturb it, yet its surface changes continuously in two ways—one very gradual and the other sudden. The former class implies the transportation of the material from high to low places by erosion and subsequent deposition, the formation of mountains and changes in sea level. These sudden changes on the surface of the earth have been associated with the earthquakes.

Earthquakes in Kashmir

An earthquake may occur anywhere as no place can be regarded as permanently immune to shocks, but they are usually confined to regions where earth-movements are in operation. Plate 2 shows in a generalised way the distribution of earthquakes throughout the world. Generally the earthquakes are localized and occur within two well defined zones :[7] (i) The

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Circum Pacific Zone; and (ii) the Mediterranean and Trans-Asiatic Zone. The Circum-Pacific zone includes the island area from Alaska to New Zealand. The second zone extends from the Azores and the Alps to the Himalayas.

As is evident from the world seismic map (Plate 2), Kashmir lies well within the zone, where most of the earthquakes of India have occurred.[8] This region has been folded, faulted and overthrusted for the last sixty five million years and is in a state of inequilibrium even to-day.

The youngest mountains of the world, the Himalayan belt (within which Kashmir falls) is a highly compressed segment of the earth's crust in which the compression of the rocks took place in a number of stages and are still in the state of adjustment. This instability creates tremors in the crust which result in a considerable loss of human life and property.[9]

The loss of life and property as a result of earthquakes in Kashmir could have been minimised, had some safety measures been devised through proper selection of dwelling sites and construction of properly designed buildings.

The following is the description of the earthquakes that occurred during the period covered by the present study :—

Earthquake of 1863

The accurate data regarding the earthquakes are, however, not recorded. According to Pt. Anand Kaul, the earthquake occurred in the close hours of the morning. Fissures were produced at different places in Kruhen and Benjil, but there was no loss of life. The shocks intermittently continued for three months.[10] Next recorded evidence available is that of the earthquake of 1873. A severe shock occurred in April which took nearly 3,000 lives, large number of cattle heads and considerable property.[11]

Another earthquake took place in the year 1878. The exact data of this earthquake is lacking. However, it caused the collapse of sixteen houses together with their inmates buried down into a chasm in a village near Mansbal.[12]

Earthquake of 1884

The earthquake of 1884 occurred at 3 A.M. on 30th May. It was quite violent and was accompanied by land noises.

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Large fissures were formed from which water and fine sand smelling strongly of sulphur were thrown up. A fissure about 700 feet long and 300 feet broad and 70 feet deep occurred at Laridura in Kruhen Pargana to the south of Baramulla.

The effects of earthquakes were very disastrous. Over 10,000 houses were destroyed and 3390 human lives and 40,000 cattle heads were lost.[13] The shocks continued for two and a half months. Many irrigation springs disappeared and a big landslide took place on the sloping ground at Laridura. Into this fissure as many as six houses with all their inmates were plunged and nothing was known about them.

The Maharaja distributed about 30,000 rupees among the sufferers for rebuilding their houses and remitted about two lakhs of rupees in the shape of land revenue to the affected peasantry.[14]

Earthquake of 1885

The most disastrous earthquake during the period of our study took place at 3 A.M. on 30th May, 1885.

Dr. Neve Ernest, a Medical Missionary at Srinagar at that time says, "It was a cold drizzy dawn 30th May; a slight shock occurred at 5 A.M. following within a few seconds by the most severe rocking and twisting movement."[15]

The earthquake was felt over an area of 1,10,000 sq. miles, the epicentre being a few miles west of Srinagar within Latitudes 34°6' and Longitudes 74° 38'.[16] Subsequent shocks were felt upto August 16. Houses were destroyed and there was a general panic. People slept for many days in the open. About 3,500 persons were killed and the number of cattle heads, ponies and other domestic animals crushed by falling buildings was enormous.[17]

Baramulla and Pattan suffered most[18] and large fissures were caused from which sulphur fumes and inflammable gases were emitted. Many old water springs disappeared and landslides occurred.

After this severe shock and falling of houses the survivors started a campaign of earthing out their kinsmen. During this time the Mission Hospital rendered invaluable medical help. Scores of wounded people were saved by the timely aid given

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by Dr. Neve and his staff.

It was calculated that the apparently frail structures escape during the earthquake while massive buildings would succumb.

Earthquake of 1902

This earthquake occurred on 20th September. The epicentre was near the Hindukush and was felt all over the Kashmir valley. At Srinagar it lasted for two and a half minutes. It was also felt severely at Gulmarg and Drosh.

The loss occurred due to this earthquake must have been negligible and hence was not properly recorded.[19]

Another shock was felt on October 6 at Chitral. Several houses collapsed and many were badly damaged. It was also felt at Srinagar, Sonamarg, Skardu, Dras and Kargil.

Earthquake of 1905

A terrible earthquake, occurring in this century is that of April 4, 1905.[20] Epicentrically it was located within the latitudes 32° 15' and Longitudes 76° 15'. Its magnitude was 8 on Richter scale. The first shock was witnessed at 6-10. A.M. in Srinagar. The tremor came from the east and travelled to the west with an oscillation of 1/4 inches lasting for three and a half minutes.[21]

TABLE 3

Number of the Shocks

Measurement of shocks	*Number of shocks*
1/4 inch	17
½ inch	11
3/4 inch	5
1 inch	10
1½ inch	20
2 inch	13
2½ inch	17
3 inch	3
3½ inch	1
4 1/4 inch	1

There was no vertical movement. The intensity of shocks was less and the loss suffered was little. Almost all pendulum

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clocks were stopped. Some bottles in the chemical laboratory were overturned, chiefly those made of Bohemian glass. A flask which was boiling over a spirit lamp fell towards west and was smashed. Hanging lamps were found swaying vigorously from southeast to northwest. The Jhelum was swollen from east to west. In the main water supply 12 inch pipes from Nishat Bagh to Rainawari there were 25 leakages caused by disjointing. Nine[22] houses in the city suffered some loss.

From the examination of barograph no definite pressure variation was observed except a slight depression commencing at 3 A.M. lasting till 8 A.M.

According to the reports received from different places in the Kashmir territory, the earthquake was felt at 5-50 A.M. at Dras, 6 A.M. at Leh; Kargil, Skardu, Uri and Muzzafarabad. There was no report regarding any loss. This again reaffirms the fact that the shocks were of little intensity and that the Kashmir fell on the wave path of shocks usually emanating from places in the Outer Himalayas.[23]

Other Earthquakes

Next year again the earthquake occurred on May 20[24] and as per the report of the Director General of Observations, its epicentre was in the Hindukush, but was felt over a large part of Kashmir valley and Ladakh. The destruction caused by this earthquake was not widespread and there was no loss of human life. Only a number of unsafe buildings collapsed.

A year later, another mild earthquake was felt on April 13 in different parts of Kashmir and in parts of northwest India. The epicentre of this earthquake was near the Hindukush.[25] This earthquake did not cause any damage except that some unskilled buildings and some chimneys of some buildings developed cracks in them.

After exactly a year of the 1907 earthquake another quake took place. It was felt all over Jammu and Kashmir State and in parts of Pakistan* upto Multan with its epicentre near Hindukush. This earthquake did cause a bit of damage in some buildings and two persons were reported injured as a result of this.[26]

*Pakistan—then in British India.

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The year of 1910 was a year of peace so far as earthquakes are concerned. But shocks were again felt on July 4,1911 at Srinagar and Gulmarg, while its intensity was less at other places. About a dozen persons were reported killed and about 1000 houses collapsed. Loss of cattle heads could not be assessed properly.

Not even a year had passed after the last earthquake that another severe shock was felt on April 25, 1912. It was felt over a wider area of Jammu and Kashmir particularly Drosh and Srinagar. It did not cause any serious damage to life and property.

Then again after four months another earthquake was felt at Srinagar and Gulmarg. After this, earthquakes did not occur upto 1917.

It was April 21, 1917 when next earthquake occurred after a lapse of five years with some difference in its epicentre. It was intensively felt at Srinagar and caused damage to some buildings. There occurred no loss of life.

Again there was no earthquake for about four years. It was on November 15, 1921 that quite severe earthquake occurred originating from the same epicentre as that of 1912. It was felt strongly over a large area in Jammu and Kashmir and in the northwest India. It was intensively felt at Srinagar. It did cause a considerable loss to the unplanned buildings and caused injuries to a number of persons.

The following year also witnessed an earthquake on December 6. It was intensively felt at Drosh and Srinagar but caused no loss of life and property.

The last earthquake[27] during the period of our study took place on September 30, 1923. It was not a severe earthquake and also there was no loss of life and property.

As far as Jammu Province is concerned, the whole of it experienced a severe shock in 1905, which caused a few deaths and considerable damage to property.[28] Thereafter it has remained safe from such calamity. The Ladakh region experienced frequent shocks, but these were of mild intensity.[29]

The intensity and frequency of earthquakes directly tell upon the economic life of the people. The greatest problem for the survivors is the absence of any immediate shelter. The State

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Government supplied cost free wood to the people for the reconstruction of their houses, but a better alternative site was never considered.

These calamities, in a way, exposed the superstitions of the people. The Kashmiris always looked towards the shrines of their Pirs for protection and in villages people gave special offerings to their saint who, they believed had protected them. In general there was little change in the beliefs and attitude of the people.

No more spectacular natural processes affect people on this earth than earthquakes. Earthquake risk is real. We should learn all we can about the earthquakes—their occurrence, their causes and what happens during an earthquake. Then only we can plan for tomorrow's earthquakes.

The action of the Government is principally along two lines: Legislation and Administration. Losses in earthquakes could be substantially cut by enforcement of improved building codes and to endure better earthquakes—resistent designs. Most loss of life in earthquakes is due to collapse or partial collapse of buildings. Really hazardous, poorly designed and poorly built structures should be demolished. Landuse zoning can be very effective in reducing losses, with geological recommendations of all lands being subdivided for residential and commercial use.

Earthquake prediction has been possible in quite a number of cases. More work is being done in this regard in China and United States of America.[31] We should take another step into the future to look at the possibilities of "earthquake control".

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CHAPTER VI

FIRES

Fires in Kashmir Province

Fires have caused frequent distress to the people of Srinagar. The chief cause of this trouble had been the kangri (an earthen pot) in which burning coals are kept to keep the body warm. Every one in Kashmir makes regular use of the kangri during the winter months. They often go to bed with it and a little carelessness results in a conflagration. Secondly, the houses are still made largely of wood with thatched roofs and once it catches fire, it is very difficult to arrest it. Whenever there occurs any such incidence, the Kashmiris accept it as an incident of the curse and, therefore, inevitable and simply watch the scene rather than make an effort to extinguish the fire and finally weep bitterly after the things turn to ashes.

Srinagar suffered most because of its crowded houses and narrow lanes. There was hardly any road in the city through which fire engines could be brought, and nor was there any organised fire brigade till 1894. Small pitchers of water were kept at many points as a precautionary measure, but these were of little use when a fire broke out.

The earliest mention of the city fire in the period covered by this study was in the year 1850. The fire broke out at Tankipura and then spread upto Zaindarmohalla. According

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to some, as many as *20,000[1] houses were destroyed by this fire. Tankipura was once again the scene of fire in 1875, during the reign of Maharaja Ranbir Singh. This time about 700 houses were destroyed. The exact cause of this fire was not known.

After a lapse of three years, a fire broke out at Habakadal in 1878 and then spread towards Sadi Qazizad. About 1,000 houses were reduced to ashes.[2]

In May 1885, during an earthquake, kangries were thrown helter-skelter and a series of fires broke out simultaneously. As usual, the thatched houses were consumed and many persons lost their lives.[3]

In the year 1892, six fires broke out. Of these, the fire that took place in the month of May destroyed a thickly populated locality of the city. The one that took place in the middle of December was unprecedented.[4] The fire occurred at Habakadal which extended down to Fateh Kadal and also across the river. About 1500 houses and several thousand maunds of shali stored in them were burnt[5]. Unfortunately, this was followed by a severe epidemic of cholera. The fire rendered about 7,000 persons homeless.[6] The State government supplied free timber to the sufferers for rebuilding their houses[7]. This fire also aroused the interest of the State Government in organising a fire brigade.

The year 1893 passed without any untoward incident. The year 1894-95 witnessed about seven fires, which destroyed about 155 houses. The fire brigade which had recently been organised could not work satisfactorily. The Srinagar Municipality passed a law prohibiting the construction of houses with roofs made of inflammable material. It seems that the law was not enforced strictly, because wooden roofs are still the practice. However, the recurrence of fires in Srinagar and consequent losses were considerably reduced.

Another fire took place in the year 1898. This time the scene was terrible. The fire broke out in the Maharaja Ranbir Ganj Bazar, the commercial centre of the city. Many business

*The number seems to be highly exaggerated since there would have been hardly 20,000 houses in the whole city.

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premises were gutted.[8] The custom office was also burnt down. The fire was supposed to have taken place due to the inadvertance of some smokers who had thrown their cigarette butts carelessly. The exact cause and the details of the losses caused by this fire are not available.

Thereafter, no severe fire broke out till 1908. It was on 15 January at about 1 a.m., that a fire broke out in the area near Zainakadal bridge. The fire first started from a halwai's shop. This area was a very congested part of the city with some houses projecting even into the Zainakadal bridge. This helped fire to advance into the bridge. An area of about 600 sq. feet containing about 100 houses was completely burnt down. About 25 by 21 feet area of the bridge (almost one span) had also been burnt.[9]

The lines which were spread over in that area cracked at two places and leaked at three places. The fire was a blessing in disguise. It gave an opportunity to municipal authorities, who started rebuilding the area on an improved plan. The scheme was opposed by the rich people, who had good rental income from the centrally located shops. The idea of opening and broadening the area for better sanitation and minimising the incidence of fire in future, however, appealed to the people. To save the bridge from any conflagration in future, the Minicipality got constructed a 24 feet[10] wide road along the river side, which was formerly crowded with the projected portions of the houses. The shops in this area were also removed to provide for greater space, and better drainage was also provided. The people from whom the land was acquired for this purpose were either given land elsewhere or were given money in compensation.

Two Small fires[11] broke out in the month of June, 1913—one in the Karfali mohalla on the 16th of the month and the other in mohalla Bogigias on the 28th. These fires did not cause any serious loss and were arrested in no time. Again, after about a month, on the night of 31 July, a severe fire broke out in the Silk Factory situated on the outskirts of the Srinagar city. It destroyed six filatures, almost the whole stock of cocoons including the fresh crop and 1272 basins out of 2072 available at that time. The total loss in terms of money was Rs.

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15,14,423 of which about 12 lakh were recovered from the Insurance Company.[12] The construction of gutted factory was taken up in 1914 and was completed in 1915-16.[13] To reduce the risk of fire in future a fire protection scheme[14] was devised by Mr. M.L. McNamara, the then Director of Sericulture, Kashmir. It included laying fire hydrants, installation of Grinnel's sprinklers and the erection of two party walls in each of the cocoon stores. To get this scheme implemented, Rs. 1,367,18 were provided for in the budget for the year 1915-16.[15]

The year 1917-18 witnessed many accidental fires which were all of minor nature. In the month of December, 1916 about five fires broke out in certain mohallas at Srinagar. All these fires were accidental and were soon brought under control. The loss sustained by individuals on account of these fires ranged from Rs. 5 to Rs. 500/- The fire brigade, municipal sweepers and mashkies and policemen rendered timely help on all incidents and thus saved the city from disaster. The year 1918 was full of fire accidents. Two fires broke out in the month of January in the mohallas Chinikral and Ishan Sahib respectively. Zainakabal was the scene of a fire on 7 February and mohalla Chatabal on 8 March. Two fires occurred in the month of April in the Maisama and Aramwati mohallas; two fires took place in month of May in Awantipora and Nawa pora mohallas and four fires took place in the month of June in mohalla Batamalu, Amirakadal, Khandabawan and Gawa-kadal, respectively.[16] All these accidental fires were checked soon after their occurrence and so no serious loss of men and material took place.

Another fire broke out in the building of Pratap Model Farm[17] near Shalamar on 25 February, 1918. The exact cause and the actual loss are not known except that the Farm Managers Quarter was burnt and he lost his personal belongings. The adjoining store rooms with their contents were saved.

The last fire that gutted a part of Srinagar during the period of our study, occurred in Amirakadal in July, 1921. The exact cause and the extent of loss are not known. However, the fact that about 22 persons[18] including 8 people of fire

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brigade were injured while fighting the fire, strengthens the view that the fire was quite widespread and disastrous. Some of those whose property was destroyed, made certain allegations against the fire brigade. Consequently, an enquiry was conducted by the Additional District Magistrate and Police Inspector jointly, but none could prove the allegations made against the fire brigade. It was proved that the fire brigade did all they could under the circumstances and that they could have done better had the pressure of the water in the pipe been not very low and the owners of the adjacent houses had not abused and unnerved its staff.

In fact the fire brigade could operate only at a few points at a time. But, unfortunately, fires in Kashmir were generally widespread and a large number of houses were involved. So the fire brigade chose only those points which would check any further spread of fire and would bring the fire under control. But on the other hand, the people became anxious during any fire to save their own property without any regard to what may happen to the rest. That is why there were allegations against the Fire Brigade.

In the muffasils the town of Baramulla suffered heavily when fire broke out there in 1889-90. Many houses and shops were burnt down.[19] The loss incurred on account of this fire was immense. The State Government gave relief in terms of free timber. Another big fire took place at Verinag in 1899-1900 and almost destroyed the palatial building standing at the corner of the famous spring.[20]

In the current century a big fire took place at Sopore in August, 1913 due to the negligence of a Gujjar, who was preparing tea in his hut. The hut had a straw roof and was soon all aflame and fire spread to other houses also. About 35 houses and shops were burnt. Moreover, six houses and one shop had to be demolished to check the further spread of fire. The loss thus caused was very heavy amounting to between Rs. 50,000 and 60,000.[21] The condition of those who suffered was pitiable. Free timber for rebuilding the houses was supplied to the sufferers and they were also permitted by the government to prepare bricks free from the usual tax.[22]

Muzzafarabad was the scene of a fire in 1915[23] which broke

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out at about midnight of 21 December. The fire was severe and caused a great loss. Lower Muzzafarabad which had the best bazar at that time was utterly destroyed. About 80 shops and 40 residential houses were burnt down. The inhabitants remained busy throughout the night extinguishing the fire. The loss was estimated at about Rs. one lakh. Though one third portion of Muzzafarabad was destroyed, fortunately only one man lost his life.[24] The fire was supposed to have taken place in one of the shops and then the wooden walls hastened the spread of fire.

The State Government distributed Rs. 1435/- in cash. The supply of timber at concessional rates was also ordered. But as the sufferers could not avail of the opportunity owing to the delay in official correspondence, the Maharaja further sanctioned Rs. 4000/-[25] for free supply of timber. In order to reduce the incidence of fire in future, it was decided that the bazar should be opened up and no one should be allowed to construct wooden walls. It was further laid down that the Wazir of Muzzafarabad should notify this condition to the people concerned and see that it was enforced.[26] After this awful scene the people of Muzzafarabad requested the State Government for arranging immediately a fire brigade for the town on a small scale.[27]

Again, after a lapse of one month, a fire broke out at Ghari in Muzzafarabad at 3 a.m. on 20 January. This fire consumed about 26 shops and two sarais. The loss estimated was about Rs. 19,900/-. The shopkeepers were supplied wood at concessional rates for rebuilding their shops.[28]

A big fire broke out on 30 October, 1916 in Mohalla Kandipura of Anantnag. The fire was widespread. About 57 houses,[29] 49 shops and kothas and one mosque were burnt down. The loss estimated was Rs. 84,000. The Revenue Minister visited the scene and distributed Rs. 1000/- as relief to the sufferers. Proper arrangements were made for the supply of timber at concessional rates for the rebuilding of burnt houses and shops.

Anantnag was once again the scene of a big fire on 21 April, 1921.[30] About 15 houses and 12 shops were burnt down and the estimated loss was about Rs. 63000/-. The Governor of

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Kashmir distributed about Rs. 2000/- to the sufferers. No loss of life was reported.[31]

Fires in Jammu Province

The first recorded incident of fire in the Jammu region is the one that took place on 20 April, 1898 in the Mandi Mubarak area. On that evening a Durbar was held to celebrate the birth ceremony of Raja Sir Amar Singh's son, which was followed by a display of fire works. The ceremony was over at about 8. p.m.[32] and within 15 minutes the Diwani Daftar in the room below the English Foreign office and the Governors' office were in flames. The usual call for aid was made to the army, but before the arrival of the sepoys the fire did spread to the second storey. There was no fire engine on the spot, so pipes were used for extinguishing the fire. No sooner did this fire spread than attempts were made to remove the records from the various offices. Before the fire could become destructive the records of the English and vernacular offices of the Revenue Member were saved. However, the Judicial records which were lying in the second storey adjoining the English Foreign Office, were destroyed in it. From the Foreign Office the fire extended to the Durbar Hall and thence to the upper storey. In order to check any further extension of the conflagration the roofs of the adjoining stables were pulled down. The outer and inner palaces were thus saved. Another gap was made between the Governor's office and the Maharaja's Private Office, which prevented the further spread of fire in that direction. The Governor's Office and the Diwani Daftar suffered most as these buildings were actually in flames before the fire fighting started.

It appears that the fire of 28 April was not accidental but a mischievous design of some miscreants, who took advantage of the display of fire works. This doubt was strengthened by the fire of 29 April,[33] when two more attempts were made by these miscreants to set fire to the Sadar-i-Adalat.

Another fire was discovered in the stationery godowns in the Sadar-i-Adalat on the morning of 2 May, 1898.[34] In the afternoon of the same day it was found that the Wazir's office room was also in fire. It was, however, suppressed soon. This was the fourth incident in four days (from 28 April to 2 May).

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Thereafter every precaution was taken to check futher arson.

The police was instructed to make enquiries into these incidents and, as a result, three persons, Shanker Dass, Devi Dass and Mohna were arrested on charge of setting the Mandi Mubrak on fire.[35] A trial was held in which Mohna was found guilty and sentenced to imprisonment for one year as well as to a fine. The other two were acquitted. The destruction of the Dewani Daftar put the State Government to a considerable loss because it paralysed the further recovery of outstanding state dues.[36]

After the suppression of fire, the State Government paid thanks to the Divisional Engineer, Jammu, Gulzari Lal, contractor, who supplied two hundred men for fire fighting, to Mr. C. Rath, a water works mechanic, to Beli Ram Line Inspector, and to the fire-brigade staff. The Maharaja granted Rs. 250/- as khilat to Alex Atkinson, Engineer, Architectural Association and Society of Arts London, who was also present on that day and rendered invaluable help in extinguishing fire. The State Government organised a shanti ceremony in which a sum of about Rs. 2400/- was spent.

Fire broke out again in Jullah-ka-mohalla, Jammu in 1908.[37] According to the records available, a widow whose property was destroyed in this fire, was given Rs. 100/- by way of relief by the Revenue Minister of the State Council. Therefore, it appears that the fire broke out in the house of that widow and remained confined to her house only. The fire was supposed to be an accidental one.

In March, 1916 a fire broke out in Kathua. The exact cause of the fire and the extent of the loss are not known. However, it is learnt that Thakur Janak Singh, a teacher and his students managed to control the fire. Thakur Janak Singh was recommended an award by the Education Minister for his timely help. No further information about the incident is available. Most probably, the fire was confined only to a small area.

In 1902[38], Raja Sir Amar Singh, the then Vice President of the State Council, issued a circular prohibiting the lighting of fire in state offices. This step was taken to minimise the fire accidents. However, there was an objection from the Wazirs of

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the Wazarats of Gilgit and Ladakh. They pleaded their case on the ground that the climate of those parts of the State is such that it was quite impossible to work or sit without a fire. Therefore, Ladakh and Gilgit were exempted from the enforcement of this order. All the other departments were instructed that even the match boxes required for sealing and other purposes were invariably kept in covered tin boxes.

In 1910[39], it was decided by the State Council to establish fire chowkies at Baramulla, Muzzafarabad, Sopore, Bijbehara and Anantnag consisting of one Jamadar at Rs. 10/- per month and four coolies at Rs. 4.00 per month each from 1912 onwards. Initially each chowki was to cost Rs. 1400/- (Manual pump Rs. 1000/- and 250 feet hose Rs. 400/-) excluding the establishment expenditure. The total initial expenditure on all fire chowkies was estimated at Rs. 7000/-. An annual establishment of these chowkies was accepted on the recommendation of the Superintendent of Police.

The total population and the number of houses in these five towns according to the Census of 1901 were as follows:

	Population	*No. of Houses*
1. Baramulla	5000	1095
2. Muzzafarabad	2800	1120
3. Anantnag	9000	1947
4. Sopore	12000	4230
5. Bijbehara	4000	849

In the year 1914[40] a few amendments to rules regarding f: conservancy in modification of State Council resolution No. 33, dated the 17th September 1892, were made, according to which the villagers who wilfully refused proper assistance for putting out fires were to be tried by the Chief Magistrate of the district. The defaulters could be punished with a fine of Rs. 1000/. or six months' imprisonment, in case of failure to pay the fine. Moreover, whenever there was a fire, the tehsildar was to hold an enquiry into the incident and to report his findings to the Wazir of the Hazarat for further orders.

In the year 1915[41], fire extinguishing appliances were purchased for Central Jail, Srinagar, on the recommendation

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of the Superintendent of the Jail. These appliances had cost the state exchequer Rs. 1992. He further requested the Home Minister that the water works department should be asked to construct three reservoirs, (i) in the compound of sleeping barracks, (ii) in the outer enclosure near the kitchen and (iii) in the centre of the compound of the manufactory.

The silk factory[42], which suffered a heavy loss due to a big fire in 1913, made an arrangement with Messrs. Mather Platt Ltd. of Calcutta in 1914 for fire protection work. This contract was recommended by the Home Minister and the Chief Minister.

In 1916, the Municipal Council of Srinagar framed certain bye-laws for ensuring safety against fire. In the first place, it was prohibited to display fire works on ceremonial occasions without the prior permission of the civic authorities. Secondly, no one was allowed to display fire works in a congested area. Furthermore, people were also instructed to light the lamps on Diwali Festival in open yards rather than on the roofs of the houses, because such displays during the night are a source of great danger. It was also added that the use of grass as roof material in the muffasil towns of Kashmir Province be prohibited.[43]

In 1916[44] Srinagar Municipality enacted another bye-law : "No person shall let off fire arms and fire works, fire balloons or detonators within the limits of Srinagar Municipality, except in open places, unless he has been granted a licence in [illegible]chalf by the Committee." The Licensee was to submit [illegible]ication in advance and was to ensure that a licence was [illegible]u in his name at least 24 hours in advance.

The Inspector General of Police suggested that pitchers should be kept by the people themselves for the present till some better appliances were obtained for fire-fighting. The services of Mr. Greenop, Chief Officer of the Bombay Fire Brigade were obtained on loan for a few weeks. His advice was sought on the improving methods of fire fighting. He was paid by the State Government at Rs. 700/- per month together with a fee of Rs. 200/- and first class T.A. and halting allowance in accordance with the Civil Service Regulations.

From the above facts, it is apparent that during the period

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under review, great loss was caused by various fire accidents. However, precautionary measures taken by the Government minimised the severity of such dangers. We also find that in later years the number of such incidents was reduced to a considerable extent.

Fires play a very limited role in influencing the social life of the people. Fires usually occur due to negligence and cause loss of property, which is at times, considerable.

Buildings in Kashmir are usually made of inflammable materials. The framework, ceilings, roofs, doors and windows are made entirely of resinuous timber. Frequently, even partition walls too are made of timber.

The Jammu and Kashmir Government established a fire brigade as a branch of the Srinagar police force in 1893. It consisted of a small force whose fire fighting equipments were only buckets for carrying water and axes for hewing planks and raftars of burning buildings. Gradually, certain improvements were introduced, but even as late as fifty years ago it was in a very unsatisfactory condition. It had to handle heavy steam pumps over long distances to the scene of the accident, where it took considerable time to get them under steam, while the fire blazed.

Fires sometimes helped the Government to improve conditions of the areas, which were congested and unhealthy. This happened in 1892 when fire broke out and destroyed thickly populated areas of Srinagar and this provided an opportunity to the Government to widen the roads in the bazars. 849

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TABLE 9

Expenditure per head in 1911 and 1921

Unit	1911			1921		
	Rs.	*a.*	*p.*	*Rs.*	*a.*	*p.*
State	0	0	10	0	1	7
Jammu	0	0	6	0	1	2
Kashmir (including Ladakh Distt.)	0	0	10	0	1	6
Punch	0	0	9	0	1	6
Bhaderwah	0	0	7	0	1	5
Gilgit Distt. & (Political Ilaqa)	0	6	1	0	7	9

and Srinagar Municipalities in 1920 amounted to Rs. 60,108 and Rs. 1,97,016 respectively i.e. Rs. 1-14-6 and Rs. 1-8-3 per head of population. This expenditure in 1925-26 increased to Rs. 99,937 and Rs. 3,12,694 respectively.[116]

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CHAPTER VIII

CONCLUSION

Natural calamities, directly or indirectly, tell upon the socio-economic conditions of the region by causing loss of life and property, by reducing the people's capacity for work, and by disturbing the normal rhythm of their life.

During the period under study, natural calamities accounted for about 161784 human lives, about 17898 cattle heads, and about 18143 houses. Information about the towns is usually correct but the data collected from rural areas are not at all authentic. This is due to the fact that the machinery deployed for the purpose was not properly organised. Moreover, the rural people were superstitious, feared the Government and usually tried to conceal facts. But, whatever be the facts, the loss caused to men and materials was heavy, considering the State's population in that period. Such losses obviously affect the social and economic life of the people, and the expected normal progress of the region is seriously retarded.

The economy of the State was based mainly on agriculture, with 80 per cent of the population engaged in it. Many, who were not directly engaged in it, were dependent on it indirectly.

The natural calamities, especially floods, occurred frequently

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during the period under study, damaging crops to a great extent, thereby causing widespread scarcity of food and fodder in the State. This certainly shook the economy of the State and put the people and Government to hard test. These calamities also played a positive role by compelling the Government to adopt new measures for the benefit of the people at large.

The new land settlement undertaken by the State Government during the eighties of the last century was mainly the result of the great famine of 1877-79. Had there been no such calamity, there would have been no such settlement. Earlier, the land was regarded as the absolute property of the State and cultivators were treated merely as tenants. The Government took from them one half of the produce as its share. This system utterly failed during the famine years of 1877-79. The experience of the Government during these years necessitated a rational settlement.

In 1880 a new system, known as Assamiwar Khewat, was introduced. It was in reality an assessed levy on villages. It was calculated by taking the average collections of the previous three years. This system also did not prove fruitful and was replaced in 1882 by a new system of auctioning the villages. It led to even greater abuses. The bidders usually cheated the State and villagers equally. No part of the State was under fixed rule of assessment and the cultivators could never be certain about their future liability.

It was under these circumstances that the State Govenment decided to have a regular land settlement. This work was initiated by Mr. A. Wingate and was completed by Sir W.R. Lawerance. Under this system, a map of every village was prepared and the soil was classified as irrigated or otherwise. Land was allotted to cultivators for ten years. This settlement assured the State of a permanent and fixed revenue and the agricultural class too benefited, because they came to know the land was theirs and laboured hard which resulted in increased output.

Trade, next to agriculture, is the backbone of a country's economy. Rise in trade usually indicates prosperity, whereas its decline marks the onset of economic depression and unemployment. The impact of natural calamities on handicrafts

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industries, trade and on the economic life of the people in general can be easily realised.

As far as this State is concerned, the volume of trade was rather small in the absence of proper means of communication. Contact with the outside world depended on yaks and horses, and the passes remained ice-bound for nearly half year. In fact, before the great famine of 1877-79, the need of good roads was never seriously felt. It was only during this great famine that the State Government had to import foodgrains from the Punjab and the necessity of roads for vehicular traffic was felt. After the famine, the construction of a cart road from Baramulla to Kohala was undertaken, which was later extended upto Srinagar. This road was given the name, Jhelum valley cart road, and it played a very important role in the life of this State in the years that followed.

The fall in the trade during the years 1891 to 1893 was mainly due to bad harvest, coupled with the revages of cholera in the valley, in 1891-92. A serious conflagration in Srinagar, in May 1892, also consumed many grain-storage. The floods of 1903-04 caused scarcity of foodgrains, which subsquently hit trade in fruit and vegetables. Trade in 1908-09 also was quite sluggish on account of widespread malaria in Jammu, and heavy rains and a very long winter in Kashmir. Moreover, a severe fire broke out in the Maharaj Ganj Bazar of Srinagar and caused considerable damage to trade. Trade in silk suffered a great setback in 1913-14. This was mainly due to the fire that broke out in the Srinagar Silk Factory* and consumed a considerable portion of it. Trade was further affected in 1919-20 by the epidemic of cholera in Kashmir and by plague in Jammu in the year 1923.

The most famous industry of the State was that of the Shawl. Kashmiri shawls, "the hall-mark of taste in fashionable[1] society", were intricately worked pieces of art. It was during the great famine of 1877-78 that this industry was almost wiped out. Out of 30,000 to 40,000 weavers, only 4,000 survived the famine. Many of the shawl-weavers migrated to the Punjab.[2] This amply suggests how cruel a blow was dealt to the shawl

*The accounts of this fire has been given in the Chapter entitled 'Fires'.

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industry by this famine.

Another important impact of such calamities is on the migration of the people. Whenever there is an acute shortage of foodgrains in a particular area, people tend to move to fortunate areas nearby. People migrated not only from one place to another within the State but also to far-off places. People who migrated outside the State generally did not come back if the calamity occurred repeatedly. In the last one century, such a major exodus took place only once during the great famine of 1877-79. In the absence of proper records, the exact number of emigrants could not be ascertained. However, most of the available records confirm that migration took place on a large scale and many people lost their lives on their way itself. Fortunately, no such calamity took place thereafter.

By the close of the last century, the State Government had undertaken the construction of a few roads which brought the State into closer contact with the rest of the country. After the great famine of 1877-79, those days of misery were over. This is greatly attributed to the improved means of communications. Import and export became easy and cheaper giving a great impetus to trade and industries.

Besides causing heavy economic losses, natural calamities like famines make people weak, thus reducing their capacity for work and physical resistance to various diseases. These calamities not only increase death-rate but also reduce birth-rate, thereby slowing down the growth of population, and in those days this State was not over-populated.

The following table shows the variations in the growth of population as recorded in different years.

TABLE 1

Variations in growth of population

Year	*Population*	*Variation*
1873	15,34,972	—
1891	25,98,387	—
1901	29,05,578	+12.0%
1911	31,58,126	+ 8.6%
1921	33,20,518	+ 5.1%

Source : Census reports for the respective years.

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Since there was no proper establishment for this purpose, the census of 1873 was only a rough calculation. It was only in 1891 that a proper organisation was set up and thereafter censuses were undertaken after every ten years. The above table indicates an increase in the population by 12 per cent between the year 1891 and 1901. The increase in population, between 1901 and 1911, which was only 8.6 per cent, proves that the ravages of plague in the Jammu province and those of cholera and floods in Kashmir caused a fall in the growth of population, as compared to the earlier decade. The years 1911-21 witnessed a further fall of 3.5 per cent. This was mainly due to the appearance of influenza in the form of a major epidemic in the year 1918, which together with other infectious diseases caused 88294 deaths in the whole State during the decade 1911-21.

The people of Jammu and Kashmir were extremely superstitious and culturally very backward. As already mentioned, the people, particularly Hindus, attributed diseases, like smallpox to the Goddess Manasa and seldom took any preventive measures or went for timely treatment. Similarly, people who survived earth-quakes paid homage to the shrine of a Pir in their vicinity. In fact, people never knew the exact cause of such calamities and simply followed old nostrums. Modern medicine was much dreaded and hated. All these were, to a large extent, responsible for the ravages of epidemics.

There were only a few indigenous *Pathshalas* and *Madarsas* in the State and the number of students attending was very small. They were taught Arabic, Persian, Sanskrit etc. but remained traditionalists and superstitious in their outlook. It was only in 1880 that the first school on western lines was opened at Srinagar by the Church Mission Society. Following this, the State Government also established one such school in 1886 and thereafter quite a few western type schools were opened.

Besides, the number of private schools, which was 14 with 1075 students in 1891, quadrupled by 1921. By the end of World War I, the Church Missionary Society also had opened many branches of schools, and one high school for girls at Srinagar. Two colleges, one each at Srinagar and Jammu, were

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also started in 1905 and 1907 respectively. Thus education made commendable progress in the state during the period of this study.

The table given below shows the increase in the numbers of educational institutions and scholars between 1891 and 1921.

TABLE 2

Educational Institutions and students

Year	*No. of Institutions*	*No. of students*
1891	45	3,776
1901	87	7,214
1911	379	21,194
1921	670	32,971

Source : Census Reports of the respective years.

The above table shows that the number of the institutions increased nearly fifteen times between 1891 and 1921 and the number of students also increased remarkably.

The spread of education had a tremendous impact on the lives of the people. It brought home to them the value of western medicines and the good effects of sanitation. The people who usually opposed any new measure became slowly prepared to accept new regulations for their better sanitation. For prevention and cure of diseases, such as plague, small pox and cholera etc., inoculations and scientific treatment became increasingly popular and people were taught the value of hygienic living.

The picture of the period under study is not of gloom alone. If the calamities caused serious devastations and retarded the progress of the State, they were also partly responsible for many desirable changes. The State Government and the people responded positively to the challange of these calamities through a number of preventive and relief measures, which gave the necessary jolt to a very traditional community in a corner of this continent.

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Basohli	1914

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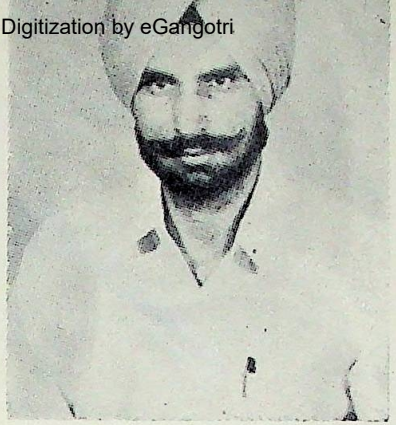

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